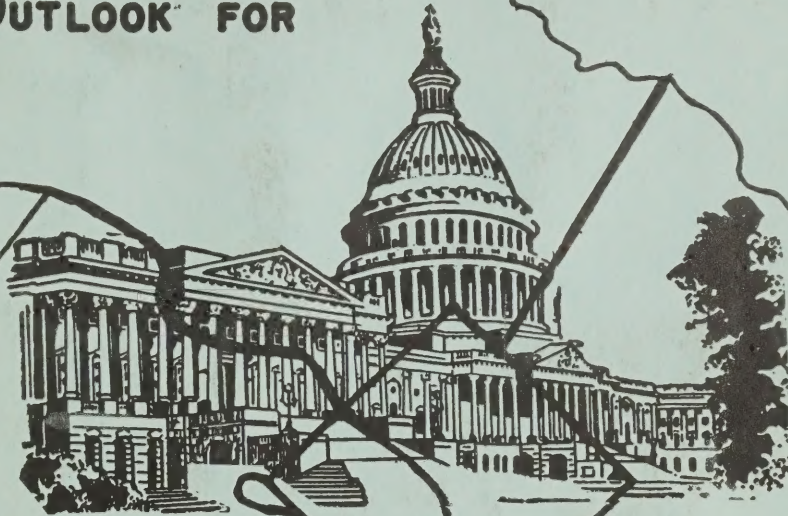


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**OUTLOOK FOR**



**PROFESSIONAL, SCIENTIFIC AND  
TECHNICAL PERSONNEL  
IN THE NATION'S CAPITAL**

**UNITED STATES DEPARTMENT OF LABOR**

**UNITED STATES EMPLOYMENT SERVICE  
for the  
DISTRICT OF COLUMBIA**

INV. '60

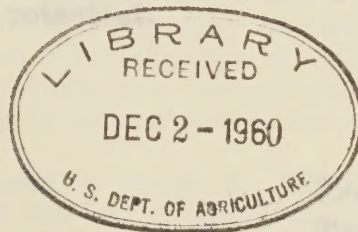
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OUTLOOK FOR PROFESSIONAL,  
SCIENTIFIC AND TECHNICAL PERSONNEL  
IN THE NATION'S CAPITAL,

A Report on Estimated Employment in 79 Selected  
Professional, Scientific and Technical Occupations  
in the Washington Metropolitan Area, December 1957;  
and Employment Prospects in the Metropolitan Area  
and in these Selected Occupations for 1962.



UNITED STATES DEPARTMENT OF LABOR

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UNITED STATES EMPLOYMENT SERVICE  
for the  
DISTRICT OF COLUMBIA





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## FOREWARD

Manpower changes expected to take place between 1960 and 1970 in the metropolitan area of Washington will be accompanied by significant shifts in our occupational and industrial structure. These changes will have important implications for the education and training of our young people as well as the management and utilization of our labor supply.

This study of the anticipated requirements for selected professional, scientific and technical occupations point up the changes which may be expected in these occupations in the Washington Metropolitan Area by 1962. By carefully planning our future needs, the business and educational leaders of the Washington area can make the best use of our manpower potential.

Fred Z. Hetzel,  
 Director United States  
 Employment Service for  
 the District of Columbia

<sup>1</sup> Washington Board of Trade, Estimates for the Washington and Greater District Metropolitan Areas are from the Population Division of the United States, U.S. Department of Commerce.





## PREFACE

Metropolitan Washington is a unique labor market. The single most important employer in the metropolitan area is the Federal Government. It employs more than one-third of the non-farm wage and salary workers in the area. The dominance of the Federal Government, as an employer, exceeds that of the automobile industry in Detroit and the steel industry in Pittsburgh.

Like many other metropolitan areas, Washington is growing and its economy is expanding. The 1956 estimates of population growth showed that only the Houston and Los Angeles metropolitan areas exceeded metropolitan Washington's 29% increase in population since the 1950 Census.<sup>1</sup> Already a major professional labor market, the area is becoming the center of greatly increased research-manufacturing and developmental activities. In addition, many national organizations have relocated their headquarters to Washington because of the presence of the Federal Government. These industries help swell the demand for personnel in various professional, scientific and technical fields. The net result, despite the growth of the local labor force, is an intensification of already existing shortages in these occupations.

The public employment service offices in the metropolitan area are aware of this problem. The United States Employment Service for the District of Columbia undertook this study to estimate present and future needs for workers in selected professional, scientific and technical occupations for a three-fold purpose; to present estimates of industry's future labor requirements; to provide job opportunity information to students and others seeking employment in these fields; and also to establish a professional occupational index for use in the Professional Office of the local employment service.

This report was prepared by Evelyn W. Farber, Labor Economist. The collection of the data for the District of Columbia was supervised by Fred G. Miller, Occupational Analyst, with the assistance of Virginia A. Cornelius, Employment Service Specialist. Ernestine R. Rollins assisted in the compilation of the data. The report was prepared in cooperation with the Bureau of Employment Security, United States Department of Labor, and with the assistance of the Maryland Department of Employment Security and the Virginia Unemployment Compensation Commission.

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<sup>1</sup> Washington Board of Trade. Estimates for the Washington and Houston Standard Metropolitan Areas are from the Population Division of the Census Bureau, U.S. Department of Commerce.





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ACKNOWLEDGEMENTS

This report would not have been possible without the cooperation of the several thousand employers and management personnel in the metropolitan area -- both in private industry and in various government offices -- who participated in the survey.

The State of Maryland Department of Employment Security and the local personnel in the Bethesda, Silver Spring and Hyattsville Employment Service Offices conducted the sample survey in those portions of Maryland which fall within the Washington Metropolitan area. The Virginia Unemployment Compensation Commission and the Alexandria and Arlington Employment Service Offices supervised the sample survey in the Virginia sector of the metropolitan area. Henry F. Hubbard of the Department of General Administration, Government of the District of Columbia, was responsible for the survey in all appropriate departments and agencies within the District of Columbia Government. Flora Nicholson of the Employment Statistics Office of the United States Civil Service Commission made available unpublished data on employment by occupation in the Federal Government for the metropolitan area for February 1957.

The endorsement of various community groups, among them the President's Committee on Scientists and Engineers, the Washington Board of Trade, the Washington Personnel Association and the District of Columbia State Federation of Business and Professional Women's Clubs is greatly appreciated.

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## SUMMARY OF FINDINGS

This study of employment prospects in 79 selected professional, technical and scientific occupations in the Washington metropolitan area for 1962 is based on a sample survey of employers in the area, conducted from November 1957 through February 1958. The employers in the sample were requested to indicate present and anticipated employment in their concerns, and to detail the number of workers in the selected occupations, the number of women in these occupations, and their expected need for workers of these types for 1962. Based on these data, estimates of the employment of professional, scientific and technical personnel for 1957 were derived, and anticipated employment levels for 1962 were projected. Excluded from the scope of the study is the anticipated effect of the location of new firms and new industries in the metropolitan area.

Although the survey was conducted at a time when the recession probably resulted in some marked conservatism with respect to future employment needs, the data reflect an overall optimistic expectation. By 1962, total employment in all sectors of the economy of metropolitan Washington is expected to increase about 8% above 1957 levels.

TABLE 1: TOTAL EMPLOYMENT AND EMPLOYMENT IN SELECTED OCCUPATIONS, WASHINGTON METROPOLITAN AREA, DECEMBER 1957, PROJECTED FOR 1962<sup>1</sup>

	December 1957	1962	% Increase 1957-1962
Total Employment.....	663,300	717,300	8.1
Employment in Occupations Survey....	93,250	115,422	23.8

<sup>1</sup> Data from Tables A and B

Employment in the 79 selected occupations will expand by almost 24%, an increase approximately three times greater than that of total employment.

The estimates also anticipated a significant shift in the relative importance of professional, scientific and technical workers. Although the number of these workers is expected to rise in the Federal and non-Federal Governments as well as in private industry, the increase is expected to vary widely among the various sectors of the economy. In the Federal Government, employment in the 79 selected occupations is expected to increase by more than 8,000, while total Federal employment is estimated to grow only by about 4,000. Thus, in the Federal service, the increase in the selected occupations will be accompanied by a shift in the relative importance of these occupations. In the private sector of the economy, and in State and Local governments,



TABLE 2: ANTICIPATED INCREASES IN TOTAL EMPLOYMENT AND IN EMPLOYMENT IN SURVEYED OCCUPATIONS, WASHINGTON METROPOLITAN AREA, 1957 TO 1962<sup>1</sup>

	Increase in Total Employment	Increase in Employ- ment in Surveyed Occupations
All Industries.....	54,000	22,172
Private Industry.....	44,300	9,361
Total Government.....	9,700	12,811
Federal Government.....	4,100	8,323
State and Local Government..	5,600	4,488

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<sup>1</sup> Data from Table B

however, the marked increase in professional employment will not be at the expense of non-professional employment.

Of the estimated 93,250 employees in the selected occupations in 1957, approximately 28% were women. Employers reported female employees in 68 of the 79 occupations surveyed. A little more than half the employed women, however, were concentrated in but three occupations -- nursing and elementary and secondary school teaching. Government -- Federal, State and Local -- in the area, however, was the major employer, providing jobs for more than 7 out of every 10 women in these occupations. Since the survey questionnaire did not request data on the anticipated employment of women, there are no specific estimates of their employment for 1962.

By 1962, some 22,000 additional jobs are expected for the professional, scientific and technical occupations covered in this study. The data show, however, that an estimated 33,000 workers will be needed between 1957 and 1962 to fill these openings. The differential, by and large, consists of replacements for those who will leave the labor force because of death or retirement. For all the occupations surveyed, growth due to the expansion of the area's economy is expected to account for 66.8% of the 33,000 needed between 1957 and 1962; replacement needs, 29.6%; and the remaining 3.6%, current vacancies in these occupations.

While employment prospects for all the selected occupations are generally favorable, certain of them appear to offer better opportunities than others. Those which are expected to require the largest number of additional workers are secondary and elementary school teachers, draftsmen, nurses, electrical and electronic engineers, economists, writers and reporters, mechanical engineers, accountants and general engineers. On the other hand, the occupations in which the greatest proportionate growth is anticipated are procedure writers, artists, programmers, engineering aides, general engineers, political scientists, chemical engineers, actuaries, psychologists and mathematicians.





## INTRODUCTION

### A. Characteristics of the Metropolitan Area

Washington, the District of Columbia, is a Federal city. It is located on the Potomac River, between Maryland and Virginia on land ceded for this purpose by Maryland. As an economic and social entity, however, Washington is larger than our nation's capital city. Metropolitan Washington encompasses a commuting area which includes the suburbs in its neighboring states. Some Washingtonians live in the District and work in Federal installations or in private industry in Virginia or Maryland, while many residents of the suburban areas of these states surrounding the District work "in town" in government offices or in private concerns. For the purposes of this study, "Washington" refers to the entire metropolitan area.

Geographically, the area includes the District; Montgomery and Prince Georges Counties in Maryland; and Arlington and Fairfax Counties and the independent cities of Alexandria and Falls Church in Virginia. Increasingly, extensive areas in these suburban counties are becoming urbanized. Up-county rural sections will become increasingly suburban too. The Atomic Energy Commission headquarters in Germantown, Maryland, for example, is now the focal point of such an area. In addition, extensive areas in adjoining counties are now well within this metropolitan region. Within a 50 mile radius of the District lie Fredericksburg, Virginia; Frederick, Maryland and Baltimore, Maryland. Activities now taking place within this circle indicate many nuclei for increased urbanization -- the new airport in Chantilly, Loudon County, Virginia and the increasing numbers of manufacturing plants locating at the outer rim of Prince Georges County in Maryland -- virtually on the road to Baltimore. Concurrent with this growth towards Baltimore is Baltimore's expansion towards Washington. The construction of the national headquarters building for the Old Age and Survivor's Insurance Bureau at the Baltimore-Howard County line is a prime example. As these and other metropolitan areas expand, the rural portions become suburban and urban, it is possible to foresee mergers of now independent metropolitan areas which are within short distances of each other.

The Washington metropolitan area covers roughly 1,500 square miles. The physical size of the area however, is not as significant as its strategic location. It is situated between the heavily concentrated Northeast and the growing industrial areas of the Southeast. In addition to being a natural geographic link, it is quickly accessible from all parts of the United States through its extensive rail, highway and air transportation facilities.

In January 1956, with 1,884,000 people living there,<sup>1</sup> the area

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<sup>1</sup> U.S. Department of Commerce, Bureau of the Census, Population Division.





ranked tenth in population among all metropolitan areas.<sup>2</sup> Less than half lived in the District itself, while just about half resided in the suburbs within a radius of 10 miles of the District's boundaries.

Between the 1940 and the 1950 Censuses, the population in the area increased 51%, for the third highest percentage increase among all major standard metropolitan areas in the country. Between the 1950 Census and the January 1956 estimate,<sup>3</sup> the population increased by 29% - only Houston and the Los Angeles metropolitan areas showed greater growth for this period. For the present, according to the Washington Board of Trade estimate of a population of 2,000,000 in December 1957, the increase over 1950 would be 37%. Most projections of population for the area indicate a rate of growth by 1960 which will be greater than the 1940-1950 rate.

About one-third of the population in the area works for wages or salaries. It is these employees who represent the universe for this study. The many accountants, doctors, dentists, lawyers, architects and engineers who have their own offices or practices are self-employed, and are not covered in this survey.

In December 1957, at the time of the survey, there were 663,300 non-agricultural wage and salary workers in the metropolitan area. Of this number, 35% were on the Federal payroll, 58.5% were employed in private industry, and the remaining 6.5% held jobs in state and local governments. Thus, while Washington is not a one-industry area, one employer -- the Federal government -- dominates the scene. Nowhere else among the nation's largest industrial centers do we find so large a concentration of employment in a single industry. No one employer in the automobile industry in Detroit or in the steel industry in Pittsburgh -- industries which dominate the economies of their respective areas, -- accounts for so large a sector of the working population as does the Federal Government in the Washington metropolitan area.

In Washington, the two largest divisions in private industry in December 1957 were trade, with 21.8% of all workers employed, and the service industries, which employed 15.3% of the wage earners in the area. In part, trade and service maintain high employment levels because of the hundreds of thousands of tourists who visit our nation's capital. The service industry category, in Washington, is relatively larger and more varied than in most other areas. It includes many national and international organizations -- trade associations, labor organizations and professional and scientific societies -- private educational, research and developmental groups, and the news-gathering organizations so located because of the proximity to the three branches of the Federal government. It is in these particular industries, as well as in the research-manufacturing firms that we find most of the non-

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<sup>2</sup> Washington Board of Trade -- Using Census' estimates wherever available.

<sup>3</sup> op. cit.



government professional, scientific, and technical occupations covered in this survey.

The District of Columbia government, local city and county governments in the Maryland and Virginia suburbs, and some Maryland and Virginia state offices within the metropolitan area constitute the State and Local government category. While only 6.5% of those employed in the metropolitan area worked in this sector, it constituted the major employer of teachers and social, welfare, and recreation workers, and was a significant employer of workers in other occupations.

In addition to the uniqueness of the industrial structure of the area, it is worth noting a few other distinctive characteristics. Washington has a higher proportion of male and female college graduates than any other metropolitan area.<sup>4</sup> Also, Washington has the highest median family income of all urbanized areas in the United States. Lastly, the area is "depression-proof." This does not mean that there is no unemployment, but that it is generally well below the national average. During a national crisis, for example, government employment increases. As government employment declines, the private sector grows, frequently absorbing many of the displaced government workers.

#### B. Background of Study

As Washington's economy develops, its population grows, and the area expands industrially as well as externally, the increased demand for goods and services will necessitate a larger labor force. This is illustrated by the increased research-manufacturing and developmental activity going on in the area (primarily in private industry) and the continuing influx of national organizations. All the new industries locating here create a demand for additional workers of all kinds, but the industries mentioned above particularly need professional, scientific and technical personnel at a time when there are shortages in some of these occupations in the local labor market.

Expecting that shortages of professional, scientific and technical workers will be intensified by new industry and by the increased needs of present employers in the area, the United States Employment Service for the District of Columbia selected certain of these occupations for study.<sup>5</sup>

The study was undertaken to estimate employment and unfulfilled demand in these selected occupations in 1957 and employment prospects for them in 1962 for the Washington area. Such information would serve to make employers aware of the total increased need for such employees and they could then plan recruitment and replacement activities to facilitate their own unhampered expansion. Students - not necessarily

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<sup>4</sup> U.S. Department of Commerce; Bureau of the Census, Census of 1950.

<sup>5</sup> The basis for the selection of the occupations included in this study is to be found in the section on Methodology in the Appendix.





in the local area - could use this information to plan their careers with prospective opportunities in mind. These estimates will also be useful for the trained labor force which is anticipated for the nation as a whole. Labor force projections for the whole United States indicate a greater proportionate increase in the "white-collar" segment of the labor force than in the "blue-collar" sector.<sup>6</sup> Of the white-collar workers, the fastest growing occupational group will continue to be the professional, scientific and technical workers. It is important to these people that Washington, perhaps the major professional market, can be expected to continue offering them employment opportunities.

The survey which resulted in this publication was based on a sample of establishments in the District of Columbia, Montgomery and Prince Georges Counties in Maryland, and Arlington and Fairfax Counties and the cities of Alexandria and Falls Church in Virginia.<sup>7</sup>

By circularizing the remaining non-sampled firms in the District for current labor market information on the volume and characteristics of job opportunities in the selected professional, scientific and technical occupations, the Employment Service for the District was able to construct an index of these occupations.<sup>8</sup> It is now in a position to strengthen and expand its services to workers, employers, students and the community as a whole, through its knowledge of specific requirements as well as trends in these occupations.

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<sup>6</sup> "The Shifting Industrial and Occupational Composition of the Work Force During the Next Ten Years," Ewan Clague, Commissioner of Labor Statistics, U.S. Department of Labor, January 16, 1958.

<sup>7</sup> A detailed explanation of the techniques involved in this survey is contained in part I of the Methodology section in the Appendix.

<sup>8</sup> Part II, Methodology, Appendix.





## FINDINGS AND ANALYSIS

## A. Introduction

The employers who participated in the survey, in general, predicted increases in employment for 1962. Their replies revealed their confidence in over-all prospects for the area, despite the fact that they answered the questionnaires just when this area was feeling the 1957-1958 recession. This is important because they were asked for their estimates of employment for 1962 on the assumption that then-current national economic conditions would continue for the entire period without significant change. To be specific, they were to take for granted that no war or natural catastrophe would occur, nor would we have a depression such as we had in the early 1930's, and that any recession would be minor and of short duration. Also, that scientific and technological advances would continue — affecting productivity and the consumption of goods and services. In estimating greater anticipated employment, Washington area employers indicated they believed that any recession would be minor and of short duration.

TABLE 3: PERCENTAGE DISTRIBUTION OF NON-AGRICULTURAL  
WAGE AND SALARY WORKERS, WASHINGTON METROPOLITAN  
AREA, DECEMBER 1957,<sup>1</sup> PROJECTED FOR 1962

	1957	1962
Total Employment.....	663,300	717,300
% All Private Industry.....	58.5	60.3
% Federal Government.....	35.0	33.0
% State and Local Government.....	6.5	6.7

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<sup>1</sup> U.S. Department of Labor: Labor Market News.

When the employers' responses were totaled, the result was a prediction of growth for all sectors of the economy in the metropolitan area, as indicated in Table 3. They anticipate the greatest percentage and absolute increases in employment in the service, trade and manufacturing divisions of the economy. The growth in Federal employment is expected to be negligible. From employing 35% of the area's non-agricultural wage and salary workers in 1957, the Federal government is expected to have on its payroll but 33% of the 717,300 workers anticipated in 1962. These data indicate a continuing trend, apparent since 1951, which despite fluctuations in total employment shows the Federal government employing a steadily decreasing percentage of all those employed, and private industry using the services of an ever increasing proportion of those working in the area.



Table A shows the changes in employment in the major industry divisions in the area from December 1949 to December 1957, and also projected employment for 1962. Since these latter figures are based on the employer sample as of 1957, they do not include any estimates for new firms in the area, and could therefore be considered conservative.

Anticipated total employment by 1962 will be 8.1% greater than in 1957. The largest percentage increases are expected in manufacturing (19.4%), the service industries (18.7%), and trade (8.6%). The growth in government employment is especially interesting. "All Government" shows an estimated increase of 3.5% in employment from 1957 to 1962, the smallest percentage increase among the major industrial sectors which make up the area's economy. The estimated increase in employment in state and local governments, however, is 13.1% for this period, compared to an increase of but 1.8% in Federal employment.

The curve for "total employment" in Figure 1,<sup>1</sup> (page 9) in general, is similar to that of "government" -- showing the effect the major employer in the area has on total employment. The more rapid increases in employment in trade, service and manufacturing which take place in the "calm" periods are shown by the greater slope of their curves in these periods (1953-1956 for example). Interestingly, the projected curve from 1957-1962 shows, however, that "total employment" is expected to mirror the private segment of the economy - in particular trade, service and manufacturing - instead of "government."

With the exception of "government" and "construction," the various sectors in the economy of the Washington metropolitan area show an almost constant trend upwards -- the rate of increase being different in each industry as evidenced by the slope of its curve. The fluctuations in "trade" indicate how responsive this segment of the economy is to what is transpiring in "government."

#### B. Estimated Employment in the Selected Occupations, December 1957 and 1962: Tables B, C, D and E.

Employment in the 79 selected professional, scientific and technical occupations or occupational groups totaled an estimated 93,250 at the time of the survey.<sup>2</sup> These 93,250 workers represented 14.1% of the 663,300 employed in the area. By 1962, employees in these occupations are expected to account for 16.1% of the then anticipated increased number of non-agricultural wage and salary employees in Washington.

Even these figures, however, do not give a complete indication of how rapidly employment in these occupations is expected to grow. The

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<sup>1</sup> Data from Table A.

<sup>2</sup> An explanation of the selection of the occupations and the derivations of the totals will be found in the section on Methodology in the Appendix.

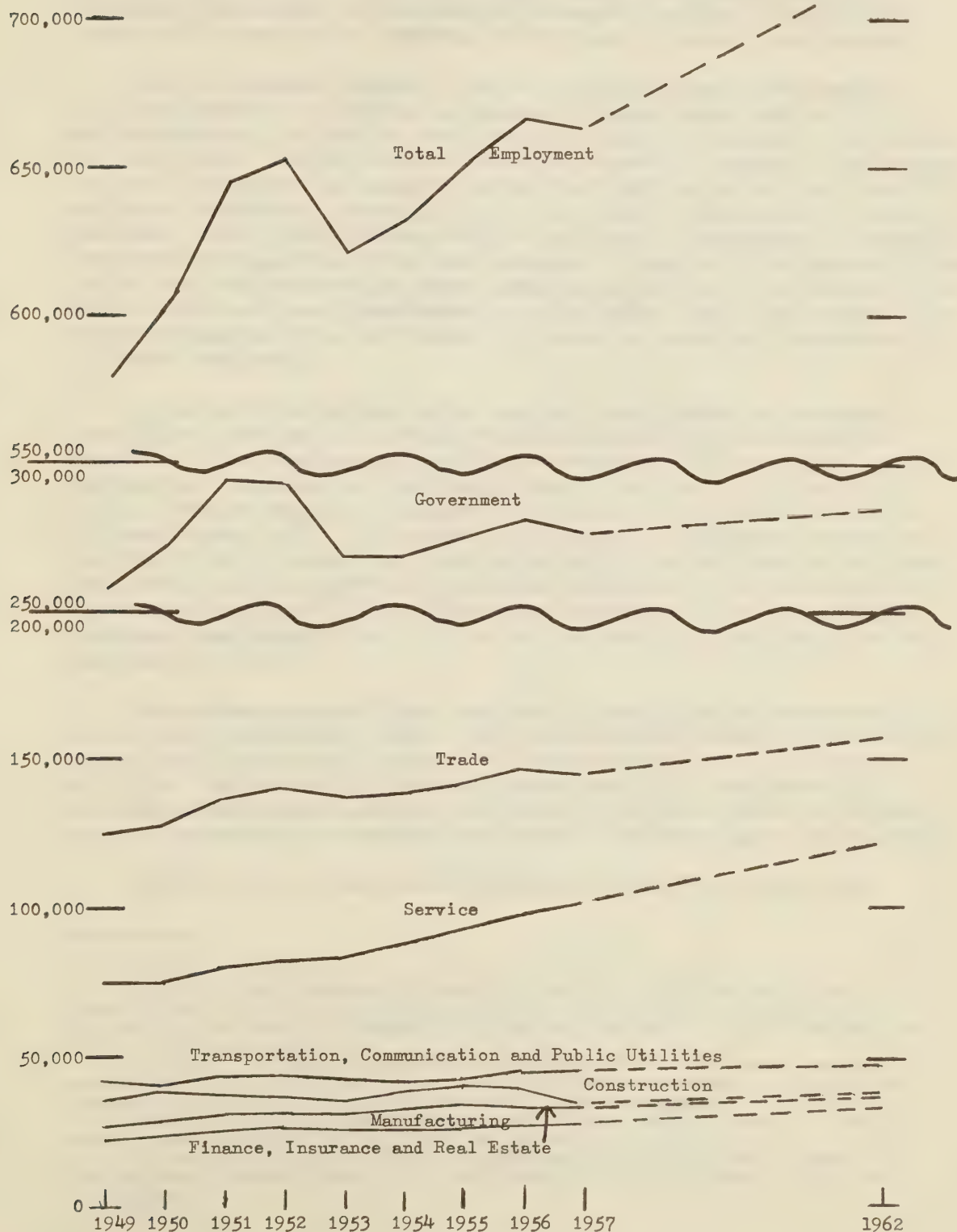




750,000

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FIGURE 1: EMPLOYMENT BY MAJOR INDUSTRY GROUP, WASHINGTON  
METROPOLITAN AREA, DECEMBER 1949 TO DECEMBER 1957,<sup>1</sup>  
PROJECTED FOR 1962



<sup>1</sup> U.S. Department of Labor: LABOR MARKET NEWS. Absolute Figures in Table A.



projections show that for the 1957-1962 period, total area employment is expected to increase less than 10%. Employment among the professional, scientific and technical personnel included in this survey during this same period, however, will expand by almost one-fourth.<sup>3</sup>

In "All Private Industry" and in "State and Local Governments" total employment is expected to increase between about 10% to 15%, while employment in the 79 occupations surveyed is expected to increase by about 30%.<sup>4</sup> In the "Federal Government" sector, however, the increase in total employment is expected to be relatively minor -- less than 2%<sup>5</sup> -- while an increase of almost 20% will take place in the selected occupations. These data indicate that in the Federal government, the demand for professional, scientific and technical workers will be disproportionate to the requirements for other employees.<sup>6</sup> In private industry<sup>7</sup> and in the state and local governments, on the other hand, the increases in these occupations does not impair the relative numerical importance of all other employees.

Appreciable employment gains are indicated above for a number of occupations provided, of course, that the trained manpower can be found.<sup>8</sup> In the professional group, the current 5,200 secondary school teachers are expected to increase by nearly 40% for a 1962 total of 7,250. Similar rates of increase are forecast for physicists and for mathematicians (42%). The number of chemists is predicted to grow by one-third, while lesser but still important gains are seen for writers and newsmen (29%), electrical engineers and nurses (26% each) and for elementary teachers (24%). Although employment of only 340 chemical engineers was reported for 1957, a 56% increase in these positions will take place by 1962.

The greatest proportional increase in technician employment will occur among engineering aides. The current 1,270 workers in this occupation will rise by 61% during the 5-year period, for a 1962 total of 2,050. Dental technicians and hygienists (41%), draftsmen (40%) and laboratory technicians and assistants (39%) show the next largest rates of expansion for occupations in this important labor force group.

In 1957, most of the 93,250 employed in the 79 selected occu-

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<sup>3</sup> Data from Table B.

<sup>4</sup> Tables B and C contain the absolute figures of estimated employment by industry and for various industry groups for all the selected occupations in the metropolitan area for December 1957, and projections for 1962 of anticipated needs in these divisions.

<sup>5</sup> In part, the size of the increase can be attributed to shifts in government requirements, decentralization, mechanization and automation of government processes, and in sub-contracting work to private industry.

<sup>6</sup> Limited solely to needs as determined in this study. Turnover, however, among present employees of all kinds may negate this conclusion.

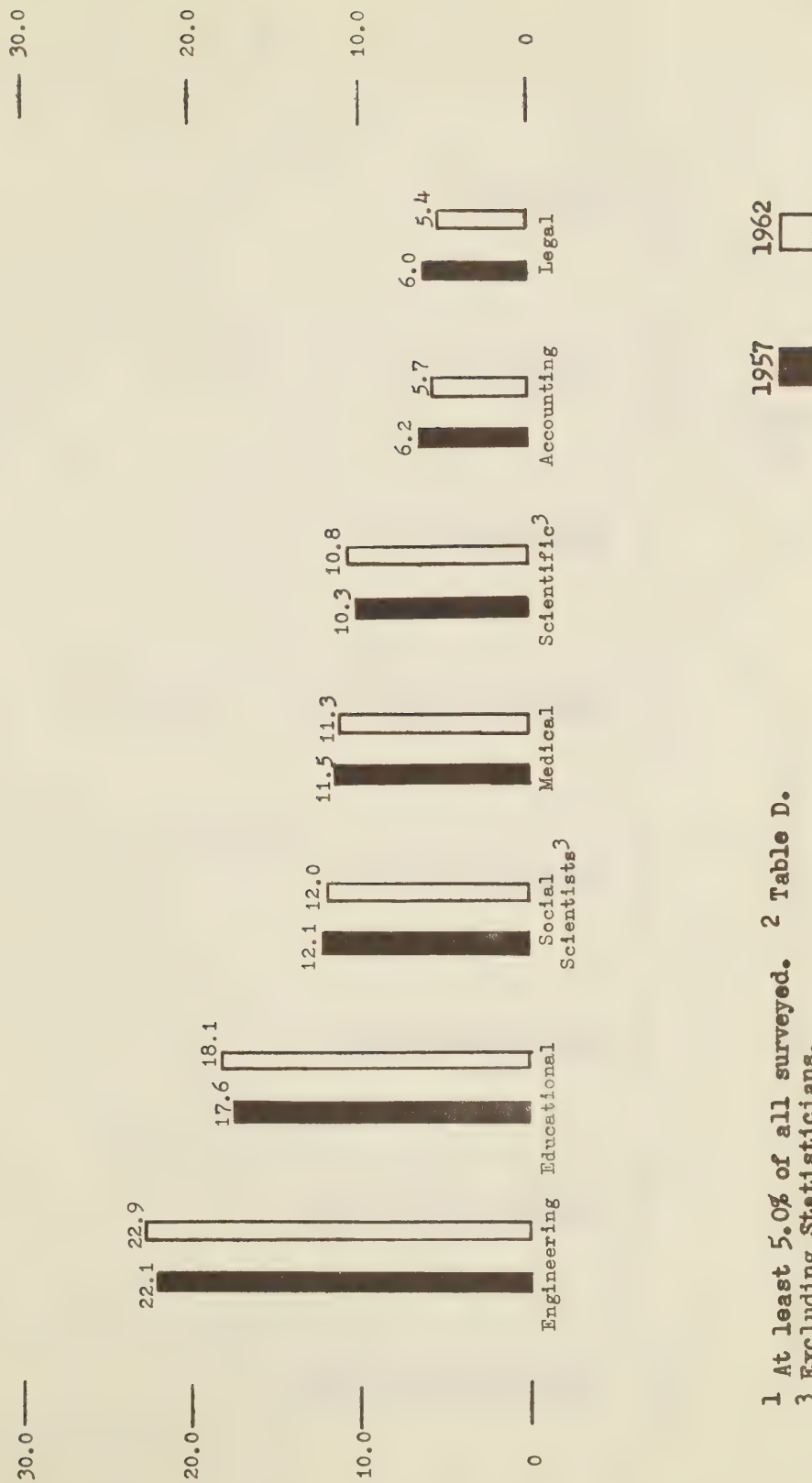
<sup>7</sup> Of the anticipated increase of approximately 9,000 workers in these occupations in private industry by 1962, about 80% will be needed in the service industries.

<sup>8</sup> Table B.





FIGURE 2: SIGNIFICANT<sup>1</sup> OCCUPATIONAL GROUPS AMONG PROFESSIONAL,  
SCIENTIFIC AND TECHNICAL EMPLOYEES, 1957 AND 1962<sup>2</sup>



<sup>1</sup> At least 5.0% of all surveyed.

<sup>3</sup> Excluding Statisticians.



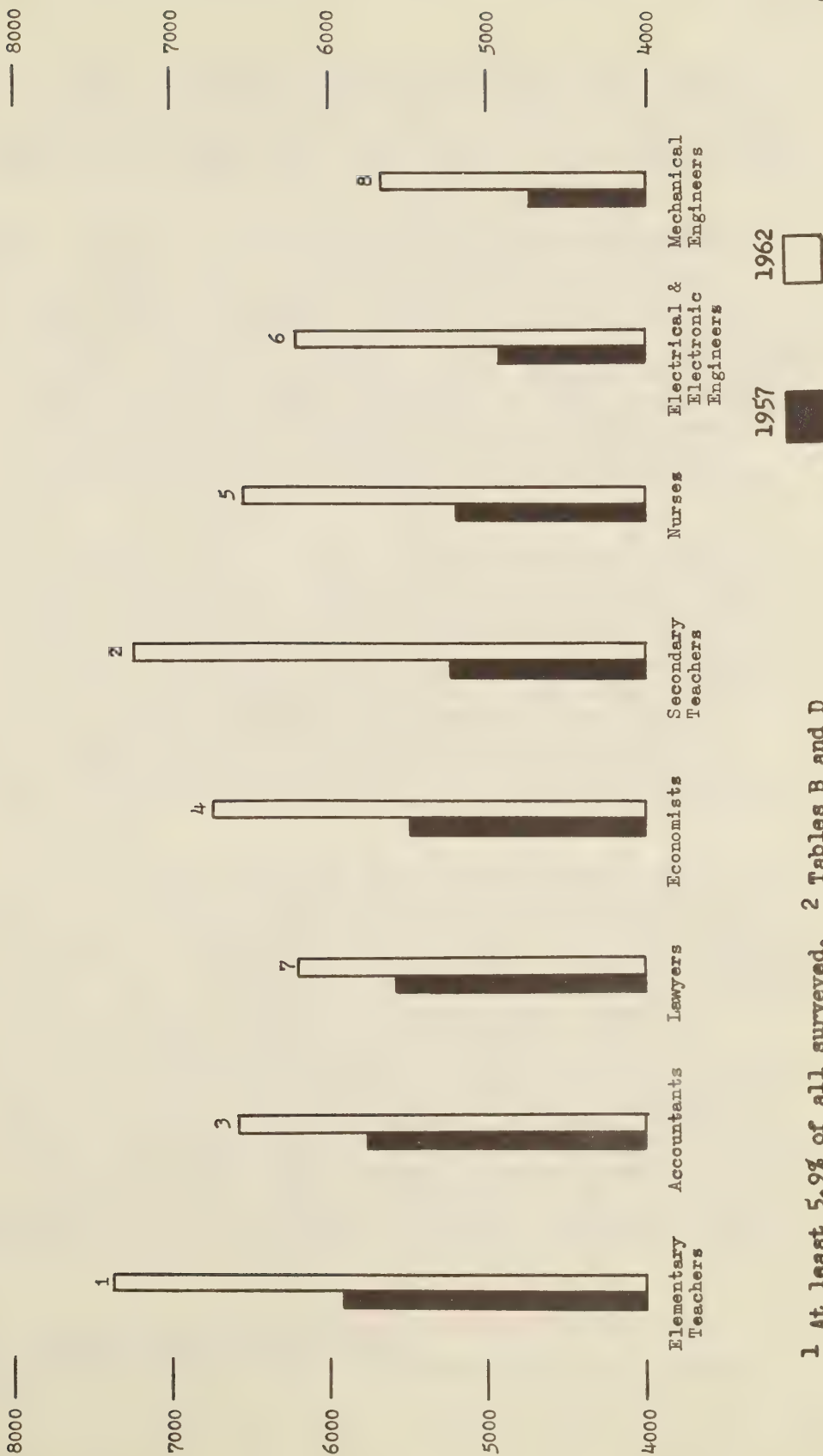
1957  1962 



FIGURE 3: SIGNIFICANT<sup>1</sup> OCCUPATIONS, 1957 AND 1962<sup>2</sup>  
(Absolute Numbers)



<sup>1</sup> At least 5.9% of all surveyed. <sup>2</sup> Tables B and D





pations fell into 7 significant occupational groups.<sup>9</sup> In Figure 2 (page 11), the percentage each group is of the grand total in all the selected occupations is shown both for 1957 and 1962. Interestingly enough, their relative rank remains the same over this period, despite the fact that some increase while others will decrease.

Figure 3 (page 12) shows the eight significant<sup>9</sup> occupations among the 79 surveyed. In this instance, however, the increase or decrease in each occupation results in a different array by 1962. Thus, the largest single occupation in 1957 was elementary teachers — a situation which is expected to remain unchanged by 1962. Accounting, however, the second largest occupation in 1957, falls to third place by 1962. While law, third largest occupation in 1957, is expected to become the seventh ranking occupation in 1962. The occupations are arranged in descending order — according to the percentage each represents of the total in 1957. The number above the bar for 1962 indicates their expected rank in that year.

The distribution of the selected occupations in "all industries" in the metropolitan area, in "private industry" and in "government" found in Table D indicates the current demand for each of the occupations surveyed, and their potential distribution at the end of the five year period. For example, accountants represent approximately the same proportion of professional, scientific and technical employment in both private industry and government. The ratio of draftsmen to engineers, however, is much higher in private industry than in government. Thus, in Table D the relative importance of each of the 79 occupations within the major sectors of the Washington economy is detailed.

Almost 90% of those working in the selected occupations in 1957 were employed by either the Federal government, the service industries or the state and local governments in the area.<sup>10</sup> Table E presents data on the extent of employment, by occupation, in the major industry segments in the area. A reading of this table for example, indicates that in 1957, more than half the veterinarians were employed in private industry (service industries), but less than 1% of all elementary school teachers were employed in private industry (service industries again). On the other hand, more than half the actuaries in that year were working for private industry (finance, insurance and real estate), while less than 15% of the statisticians in the area were in private employment (spread among 5 industry divisions). By 1962, the distribution of anticipated employment in the selected occupations among the various industry sectors is expected to shift substantially. As Figure 4 (page 14) shows, the percentage employed

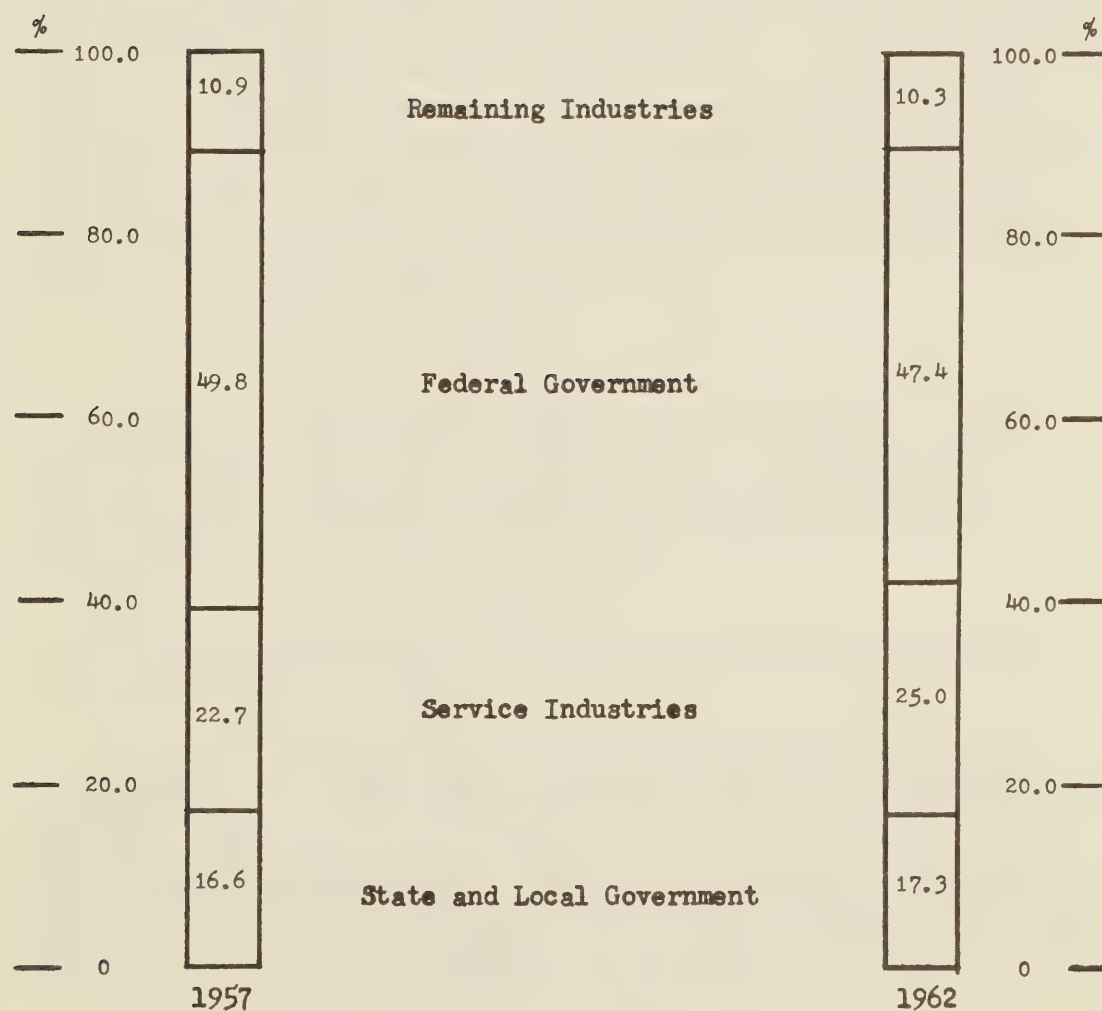
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<sup>9</sup> Each group contains at least 5.0% of the total employment in the 79 occupations surveyed, based on data in Table D.

<sup>10</sup> Table E: Percentage Distribution of Selected Occupations, by Industry, 1957 and 1962.



FIGURE 4: DISTRIBUTION OF ~~SELECTED~~ OCCUPATIONS BY INDUSTRY, DECEMBER  
1957 AND 1962<sup>1</sup>



<sup>1</sup> Table E.





in these occupations in the Federal Service is expected to fall, while the demand for these workers will increase in the service industries and in the state and local governments in the area.

For the student preparing for work in one of these occupations or for someone interested in transferring to the area, Table E indicates which industries can be expected to expand employment and thus provide the best employment opportunities. A law student will find, for example, that 28.3% of all lawyers in the area were employed in private industry in 1957 — 18.4% of them in the service industries. The remaining 71.7% were in government service — but only 1.2% of these worked for state and local governments. By 1962, private industry expects to utilize the service of 33.8% of an enlarged profession, with the growth almost completely in the service industry sector. The percentage decrease in the employment of lawyers by government is a reflection solely of what is anticipated in the federal government sector. The employment of lawyers in state and local government is expected to increase — but not to the extent that it can offset the effect of the change in the federal division.

#### C. Women in the Selected Occupations: Table F

The survey forms requested information on the number of women in the selected occupations for 1957.<sup>11</sup> As no further questions on female employment were asked, no projection of the employment of females in these occupations for 1962 is possible — despite the overall increase anticipated in the number of females in the nation's labor force.

In 1957, as Table F shows,<sup>12</sup> there were 26,057 women working in the selected occupations. Thus, almost 30% of all employees in these occupations were women.

There were women working in 68 of the 79 occupations covered in this survey. In the Washington metropolitan area, as in several others, it is not unusual to find women in such once exclusively male occupations as engineering, law, medicine, pharmacy and dentistry. There were no women, however, among the industrial engineers, mining engineers, surveyors, estimators, veterinarians, optometrists, educational therapists: medical or educational specialists, programmers, procedure writers or patent searchers employed in this area.

Almost 60% of the women covered in the survey worked in 4 occupations: about 21% were elementary school teachers, 19.5% were nurses, 12% were secondary school teachers, and 6.5% were librarians.

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<sup>11</sup> Survey forms are in the Appendix.

<sup>12</sup> Table F: Total Employment and Employment of Females in Selected Occupations, for All Industries and by Industry Division in the Metropolitan Area, December 1957.



The educational group was the largest of the four occupational groupings in which the number of women was significant, employing 36.5% of the women surveyed. Medical and allied occupations accounted for almost 25% of the total, while social scientists and librarians equaled 10.7% and 6.5% respectively.

Of the 26,057 women working in the selected occupations, 72.3% were employed in government, and 27.7% worked for private industry -- 24.6% in the service industries and 3.1% in the other components of "private industry." Despite the concentration of women in government service rather than in private industry, their occupational distribution by industry presents some interesting deviations from the expected over-all distribution. For example, almost twice as many electrical and electronic engineers were found in private industry than were in government. In this instance, most of them were in manufacturing rather than in the service industries.<sup>13</sup> Other occupations concentrated in private industry, despite the over-all distribution, included writers and reporters; doctors; pharmacists; medical record librarians; nurses; medical, x-ray and dental technicians and hygienists; college teachers; and musicians and music and dance teachers. Generally, these occupations are found in the service industries, i.e., in the private hospitals, doctor's and dentist's offices, colleges and schools, newspaper - magazine - radio and other communication media offices, and in the music and dancing schools which abound in the area. To note, however, the few exceptions to that generalization are the musicians -- who work in music stores (retail trade) primarily - and pharmacists - in retail and wholesale drug stores.<sup>14</sup>

As Table F also shows, more than half the women employed by government worked for the state and local governments in the area. One occupational group accounted for this statistic - the educational group - since public education is a function reserved to state and local government.

This table also shows the occupations in which there were important concentrations of women. Those in which they represented at least 50% of those employed were dieticians, medical record librarians, nurses, home economists, occupational therapists, elementary and secondary school teachers, physical therapists, librarians, medical technicians, social, welfare and recreational workers, and x-ray technicians. Occupations in which between 25% and 50% of those employed were women included dancing teachers, the personnel group, biologists, occupational analysts, artists, dental technicians and hygienists, and intelligence

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<sup>13</sup> This was probably due to the coding of industries (see Methodology), since research-manufacturing concerns are classified - at a particular time - either research or manufacturing, depending on the major portion of their work during the period of assignment.

<sup>14</sup> The "All Other Private Industry" column in Table F contains the figures on total employment of women in all the non-service private industries in the metropolitan area. The footnotes to the Table, however, contain the totals for each of the component industries whenever the figure in the Table consists of employment in more than one industry.





specialists. A most interesting list includes the occupations in which women represented between 15% and 25% of those employed. They were geographers, laboratory technicians and assistants, mathematicians, archivists, bacteriologists, statisticians, astronomers, zoologists, chemists, psychologists, economists, botanists and geologists.

#### D. Occupational Requirements for 1962: Table G

Employment prospects in the selected professional, scientific and technical occupations are not solely dependent upon the change brought about by the growth in the firms surveyed, nor even by the location of new establishments in the area, with their need for additional personnel. An important factor in the actual demand for personnel is replacing those employees who retire or who die. In Table G the number of job openings - in each occupation - anticipated by 1962 based on current vacancies, growth and replacement needs is detailed.<sup>15</sup>

In all, the more than 33,000 openings expected by 1962 represent about 36% of total employment in 1957.<sup>16</sup> Approximately two-thirds of these openings will result from the expansion of existing establishments. Replacement of workers who will leave the local labor force for reasons of retirement, death, etc. will account for another 30% of the jobs that become available. The then currently existing job vacancies made up the remaining 3.5% of the total openings.

Among the more important (in terms of absolute numbers) professional occupations showing a greater than average (36%) ratio of 1962 additional worker requirements to 1957 employment are chemical engineers, general engineers, nurses, elementary and secondary teachers, psychologists, librarians, mathematicians, physicists, chemists and social, welfare and recreational workers.

Engineering aides, dental technicians and hygienists, draftsmen, laboratory technicians and x-ray technicians are expected to have the greatest growth potential among the semi-professional occupations. The small number of workers in the relatively new occupation of programmer (data processing equipment) is expected to increase by 117% for the greatest proportional gain of any of the sizeable professional and technical occupations.

About 60% of the more than 33,000 job openings anticipated between 1957 and 1962 represents the demand for workers in eleven occupations.

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<sup>15</sup> For example, total requirements for mechanical engineers by 1962 will number 1,457. Included in this number are 970 more than the 4,711 presently employed -- to take care of the growth expected by 1962. In addition, 353 will be needed to replace those currently employed who will have retired from the field or have died by 1962. Combining the 134 current vacancies with the anticipated needs due to growth and replacement needs for any separations makes for an effective demand for 1,457 mechanical engineers.

<sup>16</sup> Table G.



Four of these eleven occupations: librarians, nurses and elementary and secondary teachers, usually considered female occupations, are expected to account for about 30% of the total openings. Private industry is the primary employer of four of the eleven occupations: writers and reporters, draftsmen, electrical and electronic engineers and nurses. Government is the principal employer of the remainder: accountants, mechanical engineers, lawyers, librarians, elementary and secondary teachers, and economists.

One other factor remains to be accounted for in this picture of expanded employment prospects for professional, scientific and technical employees: the supply of such workers. It is not possible to estimate this figure, for the Washington metropolitan area does not rely solely on the local supply of workers for these jobs. Trained personnel for these jobs tend to be mobile, willing to move for an interesting and challenging job. Many of these workers, recruited by the Federal government, move to Washington from all parts of the country. Some of these workers leave government for jobs in private industry in the area -- just as some of those who came originally for a job in private industry sometimes move into government service. The many fine universities, and professional and technical schools in the area turn out thousands of trained people every year. While these former students are ready to enter the occupations covered in this survey, a considerable number of them continue to study further, or return to their home communities or to other areas for study or work. Neither private employers nor the government can count on these people as a potential source of labor. The only possible statement on the "supply" of such workers is that the help-wanted columns in the newspapers and the "open" examinations in government are a clear indication that the local supply of workers for these selected occupations is and will continue to be inadequate.

TABLE A: EMPLOYMENT IN THE METROPOLITAN AREA, BY INDUSTRIES.

	MARCH 2 1940	1949	APRIL 2 1950	1950	1951	1952	1953
Area Population.....	967,985		1,461,390				
Employment Total.....		578.3		604.6	644.7	652.1	622.4
Manufacturing.....		22.3		24.1	25.7	26.8	26.2
Construction.....		35.1		39.5	36.9	35.8	35.1
Transportation, Communication and Public Utilities.....		40.1		39.6	43.1	43.7	43.3
Trade.....		123.8		126.9	135.8	140.6	136.3
Finance, Insurance and Real Estate.....		27.3		28.7	30.2	30.8	30.4
Service.....		73.4		73.6	78.5	80.7	82.2
Government.....		256.3		272.2	294.5	293.7	268.9
Federal.....		227.3		242.9	263.2	260.3	233.1
State and Local.....		29.0		29.3	31.3	33.4	35.8

<sup>1</sup> U.S. Department of Labor, U.S. Employment Service for the District of Columbia, "Labor Market News."

<sup>2</sup> U.S. Department of Commerce, Bureau of the Census.

<sup>3</sup> Estimated, Washington Board of Trade, Area Population Only.



	1954	1955	2 JANUARY 1956	1956	1957	1962	
			1,884,000		3 2,000,000		..... Area Population
633.3	651.9			666.9	663.3	717.3	..... Employment Total
26.2	26.7			27.0	27.3	32.6	..... Manufacturing
38.4	41.1			38.4	34.9	37.8	..... Construction
42.4	42.9			44.9	45.3	47.3	..... Transportation, Communication and Public Utilities
137.5	141.1			145.8	144.7	157.2	..... Trade
32.8	34.4			33.8	34.3	36.8	..... Finance, Insurance and Real Estate
87.0	91.2			96.6	101.7	120.8	..... Service
269.0	274.5			280.4	275.1	284.8	..... Government
230.7	235.0			239.2	232.3	236.4	..... Federal
38.3	39.5			41.2	42.8	48.4	..... State and Local

TABLE B: EMPLOYMENT IN ALL INDUSTRIES AND IN THE PRIVATE AND PUBLIC SECTORS

	All Industries		Total Private Industry		Service Industries		All Private	
	1957	1962	1957	1962	1957	1962	1957	1962
All Industries	663,300	717,300	388,200	432,500	101,700	120,800	286,500	
Total Employment.....	663,300	717,300	388,200	432,500	101,700	120,800	286,500	
Total Employment for Occupations..	93,250	115,422	31,308	40,669	21,211	28,880	10,097	
Accountants.....	5,738	6,597	1,618	2,050	653	937	965	
Architects.....	598	653	242	292	226	276	16	
Engineers, Metallurgical.....	101	134	8	10	8	10	7	
Engineers, Chemical.....	340	529	124	248	117	235	730	
Engineers, Civil.....	2,722	2,982	980	1,164	250	343		
Engineers, Electrical and Electronic.....	4,925	6,231	2,966	4,070	1,187	1,819	1,779	
Engineers, Industrial.....	602	692	290	350	128	158	162	
Engineers, Mechanical.....	4,711	5,681	1,810	2,475	677	1,107	1,133	
Engineers, Mining.....	76	91	1	1			1	
Engineers, General.....	1,305	2,088	503	859	314	627	189	
Engineering Aides.....	1,269	2,045	51	66	28	35	23	
Specification Writers.....	51	66	113	116	5	5	108	
Surveyors.....	173	200	160	168	6	6	154	
Estimators.....	160	168	160	168	6	6	865	
Draftsmen.....	3,464	4,848	2,233	3,225	1,368	2,193		
Artists.....	38	88	22	72	17	67	5	
Museum Curators.....	69	75	3	3	3	3		
Writers, Editorialists, Newsmen and Correspondents.....	3,458	4,447	3,439	4,426	2,303	3,181	1,136	
Home Economists.....	148	155	26	33	1	1	25	
Dietitians.....	262	307	111	126	105	120	6	

See footnotes at end of table.

Other Industry	Total Government	Federal Government	State and Local Government	All Industries
1962	1957	1962	1957	1962
311,700	275,100	284,800	232,300	236,400
11,789	61,942	74,753	46,421	54,744
			42,800	46,400
			15,521	20,009
				.....Total Employment for Occupations
1,113	4,120	4,547	3,953	4,349
			167	198
				.....Accountants
16	356	361	27	32
13	93	124	.....	.....Architects
821	1,742	1,818	147	175
				.....Engineers, Metallurgical
				.....Engineers, Chemical
				.....Engineers, Civil
				Engineers, Electrical and
2,251	1,959	2,161	16	24
192	312	342	4	3
1,368	2,901	3,206	22	39
1	75	90	.....	.....Engineers, Mechanical
				.....Engineers, Mining
				.....Engineers, General
232	1,305	2,088	119	175
31	766	1,186	.....	.....Engineering Aides
111	60	84	49	59
162	.....	.....	.....	.....Specification Writers
1,032	1,231	1,623	113	147
				.....Surveyors
				.....Estimators
				.....Draftsmen
5	16	16	1	1
.....	66	72	.....	.....Artists
				.....Museum Curators
1,245	19	21	19	21
				Writers, Editorialists, Newsmen and
				.....Correspondents
32	122	122	.....	.....Home Economists
6	151	181	76	91
				.....Dietitians

TABLE B: EMPLOYMENT IN ALL INDUSTRIES AND IN THE PRIVATE AND PUBLIC SECTORS FOR

	All Industries		Total Private Industry		Service Industries		All Private	
	1957	1962	1957	1962	1957	1962	1957	
Lawyers.....	5,570	6,195	1,574	2,097	1,023	1,506	551	
Librarians.....	2,199	2,670	241	294	226	279	15	
Doctors.....	2,111	2,421	949	1,043	922	1,015	27	
Dentists.....	141	168	29	36	28	35	1	
Veterinarians.....	187	233	101	128	101	128		
Optometrists.....	124	126	124	126	3	3	121	
Pharmacists.....	1,105	1,227	1,045	1,159	41	48	1,004	
Medical Record Librarians.....	57	70	31	40	31	40		
Nurses.....	5,199	6,569	3,116	3,998	3,035	3,903	81	
Occupational Therapists.....	68	89	18	25	18	25		
Physical Therapists.....	51	71	22	33	22	33		
Educational Therapists: Medical.....	3	4						
Medical Technicians.....	1,059	1,142	721	730	721	730		
X-Ray Technicians.....	289	334	219	252	219	252		
Dental Technicians and Hygienists...	294	414	226	339	226	339		
College Teachers.....	3,941	4,504	2,800	3,236	2,800	3,236		
Secondary Teachers.....	5,204	7,249	388	515	388	515		
Counselors.....	57	66						
Elementary Teachers.....	5,918	7,357	40	47	40	47		
Ungraded Teachers.....	307	368	253	301	253	301		
Educational Therapists: Educational.	34	44						
Educational Specialists.....	16	16	16	16	16	16		
Teachers and Educational Specialists, N.E.C.....	1,066	1,290						
Musicians and Music Teachers.....	254	274	254	274	200	220	54	
Dancing Teachers.....	700	955	700	955	700	955		

See footnotes at end of table.



SELECTED OCCUPATIONS IN THE METROPOLITAN AREA, DECEMBER 1957 AND 1962 (CONTINUED)

[illegible]

TABLE B: EMPLOYMENT IN ALL INDUSTRIES AND IN THE PRIVATE AND PUBLIC SECTORS FOR

	All Industries		Total Private Industry		Service Industries		All Private	
	1957	1962	1957	1962	1957	1962	1957	1962
Agricultural Scientists.....	465	475	5	10	5	10	---	---
Astronomers.....	38	46	---	---	---	---	---	---
Bacteriologists.....	470	576	52	71	39	57	---	13
Biologists.....	381	471	22	32	22	32	---	---
Botanists.....	135	145	1	6	1	6	---	---
Chemists.....	1,837	2,449	417	669	299	498	---	118
Geologists.....	354	391	---	---	---	---	---	---
Geophysicists.....	1,430	1,716	1	1	1	1	---	---
Meteorologists.....	358	414	1	1	1	1	---	---
Pharmacologists.....	47	63	3	7	3	7	---	---
Physicists.....	2,025	2,826	195	308	165	271	---	30
Zoologists.....	27	28	---	---	---	---	---	---
Physical Scientists: Research,N.E.C..	40	55	30	40	30	40	---	---
Laboratory Technicians and Assistants.....	1,313	1,822	361	511	221	345	---	140
Mathematicians.....	895	1,270	355	621	266	503	---	89
Statisticians <sup>2</sup> .....	1,589	1,974	220	322	138	236	---	82
Programmers.....	24	49	24	49	---	---	---	24
Economists and Business and Industrial Analysts.....	5,483	6,746	488	753	473	737	---	15
Actuaries.....	88	132	49	56	---	---	---	49
Anthropologists and Archaeologists...	17	21	---	---	---	---	---	---
Archivists.....	219	267	3	5	3	5	---	---
Geographers.....	69	84	---	---	---	---	---	---
Historians.....	191	210	---	---	---	---	---	---
Intelligence Specialists.....	2,642	2,913	---	---	---	---	---	---
Political Scientists.....	290	456	12	12	12	12	---	---
Psychologists.....	501	748	160	199	159	198	---	1

See footnotes at end of table.

## SELECTED OCCUPATIONS IN THE METROPOLITAN AREA, DECEMBER 1957 AND 1962 (CONTINUED)

Other Industry	Total Government		Federal Government		State and Local Government		
	1957	1962	1957	1962	1957	1962	
14	460	465	458	458	2	7	Agricultural Scientists
171	38	46	38	46	12	19	Astronomers
37	418	505	406	486	12	22	Bacteriologists
49	359	439	347	417	1	6	Botanists
166	134	139	133	133	10	17	Chemists
118	1,420	1,780	1,410	1,763	2	4	Geologists
86	354	391	354	391	10	15	Geophysicists
56	357	413	357	413	3	7	Meteorologists
37	44	56	41	49	10	15	Pharmacologists
166	1,830	2,518	1,830	2,517	10	15	Physicists
118	27	28	27	27	10	15	Physiologists
49	10	15	27	27	10	15	Physical Scientists: Research, N.E.C.
166	952	1,311	950	1,307	2	4	Physicians and Laboratory Technicians and Assistants
118	540	649	540	648	1	1	Mathematicians
86	1,369	1,652	1,359	1,631	10	21	Statisticians <sup>2</sup>
49	49	49	49	49	37	55	Programmers
16	4,995	5,993	4,993	5,991	2	2	Economists and Business and Industrial Analysts
56	39	76	37	73	2	3	Actuaries
14	17	21	17	21	2	3	Anthropologists and Archaeologists
171	216	262	216	262	2	3	Archivists
37	69	84	69	84	2	3	Geographers
49	191	210	191	210	2	3	Historians
166	2,642	2,913	2,642	2,913	2	3	Intelligence Specialists
118	278	444	278	444	2	3	Political Scientists
86	341	549	304	494	37	55	Psychologists

TABLE B: EMPLOYMENT IN ALL INDUSTRIES AND IN THE PRIVATE AND PUBLIC SECTORS FOR

	All Industries		Total Private Industry		Service Industries		All Private
	1957	1962	1957	1962	1957	1962	
Social, Welfare and Recreation Workers.....	1,709	2,184	328	444	328	444	<del>-----</del>
Social Scientists: Research, N.E.C..	172	213	152	188	152	188	<del>-----</del>
Personnel: Employment Managers, Training Directors and Salary and Wage Administrators.....	2,657	2,834	510	575	134	155	376
Occupational Analysts.....	124	136	<del>-----</del>	6	<del>-----</del>	<del>-----</del>	2
Procedure Writers.....	2	6	2				
Patent and Trade-mark Examiners.....	1,143	1,383	<del>-----</del>	<del>-----</del>	<del>-----</del>	<del>-----</del>	<del>-----</del>
Patent Searchers.....	40	40	40	40	40	40	<del>-----</del>
Embalmers.....	311	346	310	345	310	345	<del>-----</del>

<sup>1</sup> Includes engineering and statistical draftsmen, since they were not differentiated by employers.

<sup>2</sup> Includes mathematical and economic statisticians.





TABLE C: TOTAL EMPLOYMENT AND EMPLOYMENT IN THE 79 SELECTED OCCUPATIONS IN ALL INDUSTRIES AND BY INDUSTRY FOR ALL SELECTED OCCUPATIONS IN THE METROPOLITAN AREA, DECEMBER 1957 AND 1962

	1957	1962
<b>All Industries</b>		
Total Employment.....	663,300	717,300
Employment in Selected Occupations.....	93,250	115,422
<b>Total Private Industry</b>		
Total Employment.....	388,200	432,500
Employment in Selected Occupations.....	31,308	40,669
<b>Construction</b>		
Total Employment.....	34,900	37,800
Employment in Selected Occupations.....	1,743	1,961
<b>Manufacturing</b>		
Total Employment.....	27,300	32,600
Employment in Selected Occupations.....	3,442	4,101
<b>Transportation, Communication and Public Utilities</b>		
Total Employment.....	45,300	47,300
Employment in Selected Occupations.....	906	1,138
<b>Trade</b>		
Total Employment.....	144,700	157,200
Employment in Selected Occupations.....	3,067	3,495

TABLE C: TOTAL EMPLOYMENT AND EMPLOYMENT IN THE 79 SELECTED OCCUPATIONS IN ALL INDUSTRIES AND BY INDUSTRY FOR ALL SELECTED OCCUPATIONS IN THE METROPOLITAN AREA, DECEMBER 1957 AND 1962  
(Continued)

	1957	1962
Finance, Insurance and Real Estate		
Total Employment.....	34,300	36,800
Employment in Selected Occupations.....	939	1,094
Service Industries		
Total Employment.....	101,700	120,800
Employment in Selected Occupations.....	21,211	28,880
Total Government		
Total Employment.....	275,100	284,800
Employment in Selected Occupations.....	61,942	74,753
Federal Government		
Total Employment.....	232,300	236,400
Employment in Selected Occupations.....	46,421	54,744
State and Local Government		
Total Employment.....	42,800	48,400
Employment in Selected Occupations.....	15,521	20,009

TABLE D: DISTRIBUTION OF SELECTED OCCUPATIONS IN ALL INDUSTRIES,  
PRIVATE INDUSTRY AND GOVERNMENT, 1957 AND 1962

	All Industries		Private Industry		Government		Federal		State and Local	
	1957	1962	1957	1962	1957	1962	1957	1962	1957	1962
All Occupations.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Accountants.....	6.2	5.7	5.2	5.0	6.7	6.1	8.5	7.9	1.1	1.0
Architects.....	0.6	0.6	0.8	0.7	0.6	0.5	0.7	0.6	0.2	0.2
Engineers, Metallurgical.....	0.1	0.1	(1)	(1)	0.1	0.2	0.2	0.2	—	—
Engineers, Chemical.....	0.4	0.5	0.4	0.6	0.3	0.4	0.5	0.5	—	—
Engineers, Civil.....	2.9	2.6	3.1	2.9	2.8	2.4	3.4	3.0	0.9	0.9
Engineers, Electrical and Electronic.....	5.3	5.4	9.5	10.0	3.2	2.9	4.2	3.9	0.1	(1)
Engineers, Industrial.....	0.6	0.6	0.9	0.9	0.5	0.5	0.7	0.6	(1)	(1)
Engineers, Mechanical.....	5.1	4.9	5.8	6.1	4.7	4.3	6.2	5.8	0.1	0.2
Engineers, Mining.....	0.1	0.1	(1)	(1)	0.1	0.1	0.1	0.2	—	—
Engineers, General.....	1.4	1.8	—	—	2.1	2.8	2.8	3.8	—	—
Engineering Aides.....	1.4	1.8	1.6	2.1	1.2	1.6	1.4	1.8	0.8	0.9
Specification Writers.....	0.1	(1)	—	—	—	—	(1)	(1)	—	—
Surveyors.....	0.2	0.2	0.2	0.2	—	0.1	—	—	0.3	0.4
Estimators.....	0.2	0.1	0.4	0.3	0.1	—	—	—	—	—
Draftsmen.....	3.7	4.2	7.1	7.9	2.0	2.2	2.4	2.7	0.7	0.7
Artists.....	(1)	0.1	0.1	0.2	(1)	(1)	(1)	(1)	(1)	(1)
Museum Curators.....	0.1	0.1	(1)	(1)	0.1	0.1	0.1	0.1	—	—
Writers, Editorialists, Newsmen and Correspondents.....	3.7	3.9	11.0	10.9	(1)	(1)	—	—	0.1	0.1
Home Economists.....	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.2	—	—
Dietitians.....	0.3	0.3	0.4	0.3	0.2	0.2	0.1	0.2	0.5	0.5

See footnotes at end of table.



TABLE D: DISTRIBUTION OF SELECTED OCCUPATIONS IN ALL INDUSTRIES,  
PRIVATE INDUSTRY AND GOVERNMENT, 1957 AND 1962 (CONTINUED)

	All Industries		Private Industry		Government		Federal		State and Local	
	1957	1962	1957	1962	1957	1962	1957	1962	1957	1962
Lawyers.....	6.0	5.4	5.0	5.2	6.4	5.5	8.5	7.3	0.4	0.5
Librarians.....	2.4	2.3	0.8	0.7	3.2	3.2	3.2	3.3	3.0	2.9
Doctors.....	2.3	2.1	3.0	2.6	1.9	1.8	2.1	2.1	1.2	1.0
Dentists.....	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Veterinarians.....	0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.2	0.1	0.1
Optometrists.....	0.1	0.1	0.4	0.3	0.1	0.1	0.1	0.2	0.1	0.1
Pharmacists.....	1.2	1.1	3.3	2.8	0.1	0.1	0.1	0.1	0.1	0.1
Medical Record Librarians.....	0.1	0.1	0.1	0.1	(1)	(1)	(1)	(1)	(1)	(1)
Nurses.....	5.6	5.7	10.0	9.8	3.4	3.4	3.2	3.3	3.7	3.8
Occupational Therapists.....	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Physical Therapists.....	(1)	(1)	0.1	0.1	(1)	(1)	(1)	(1)	(1)	(1)
Educational Therapists: Medical.....	1.1	1.0	2.3	1.8	0.5	0.5	0.6	0.5	0.5	0.6
Medical Technicians.....	0.3	0.3	0.7	0.6	0.1	0.1	0.1	0.1	0.2	0.1
X-Ray Technicians.....	0.3	0.4	0.7	0.8	0.1	0.1	0.1	0.1	0.1	0.1
Dental Technicians and Hygienists.....										
College Teachers.....	4.2	3.9	8.9	8.0	1.8	1.7	2.3	2.4	7.4	6.3
Secondary Teachers.....	5.6	6.3	1.2	1.3	7.8	9.0	---	---	31.0	33.6
Consultors.....	0.1	0.1	0.1	0.1	0.1	0.1	---	---	0.4	0.3
Elementary Teachers.....	6.3	6.4	0.1	0.1	9.8	9.1	---	---	37.9	36.5
Ungraded Teachers.....	0.3	0.3	0.8	0.7	0.1	0.1	---	---	0.3	0.3
Educational Therapists: Educational.....	(1)	(1)	0.1	(1)	0.1	0.1	0.1	0.1	---	---
Educational Specialists.....	(1)	(1)	---	---	---	---	---	---	---	---
Teachers and Educational Specialists, N.E.C.....	1.1	1.1	---	---	1.7	1.7	2.3	2.4	---	---
Musicians and Music Teachers.....	0.3	0.2	0.8	0.7	---	---	---	---	---	---

See footnotes at end of table.

TABLE D: DISTRIBUTION OF SELECTED OCCUPATIONS IN ALL INDUSTRIES,  
PRIVATE INDUSTRY AND GOVERNMENT, 1957 AND 1962 (CONTINUED)

	All Industries		Private Industry		Government		Federal		State and Local	
	1957	1962	1957	1962	1957	1962	1957	1962	1957	1962
Dancing Teachers.....	0.7	0.8	2.2	2.3	---	---	---	---	---	---
Agricultural Scientists.....	0.5 (1)	0.4 (1)	(1)	(1)	0.7	0.6	1.0	0.8	(1)	(1)
Astronomers.....	0.5	0.5	0.2	0.2	0.1	0.1	0.1	0.1	---	---
Bacteriologists.....	0.4	0.4	0.1	0.1	0.7	0.7	0.9	0.9	0.1	0.1
Biologists.....	0.1	0.1	(1)	(1)	0.6	0.6	0.7	0.8	0.1	0.1
Botanists.....	0.1	0.1	---	---	0.2	0.2	0.3	0.2	(1)	(1)
Chemists.....	2.0	2.1	1.3	1.6	2.3	2.4	3.0	3.2	0.1	0.1
Geologists.....	0.3	0.3	---	---	0.6	0.5	0.8	0.7	---	---
Geophysicists.....	1.5	1.5	(1)	(1)	2.3	2.3	3.1	3.1	---	---
Meteorologists.....	0.4	0.4	(1)	(1)	0.6	0.5	0.1	0.1	---	---
Pharmacologists.....	0.1	(1)	(1)	(1)	0.1	0.1	0.1	0.1	(1)	(1)
Physicists.....	2.2	2.4	0.6	0.8	3.0	3.4	3.9	4.6	---	---
Zoologists.....	(1)	(1)	---	---	(1)	(1)	(1)	0.1	(1)	(1)
Physical Scientists: Research, N.E.C.	1.4	1.6	c 1.2	1.3	1.5	1.7	2.0	2.4	0.1	0.1
Laboratory Technicians and Assistants..	---	---	---	---	---	---	---	---	(1)	(1)
Mathematicians.....	0.9	1.1	1.1	1.5	0.9	0.9	1.2	1.2	---	(1)
Statisticians <sup>3</sup> .....	1.7	1.7	0.7	0.8	2.2	2.2	2.9	3.0	0.1	0.1
Programmers.....	(1)	(1)	0.1	0.1	---	---	---	---	---	---
Economists and Business and Industrial Analysts.....	5.9	5.8	1.6	1.8	8.1	8.0	10.8	10.9	(1)	(1)
Actuaries.....	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	(1)	(1)
Anthropologists and Archaeologists.....	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	---	---
Archivists.....	0.2	0.2	---	---	0.3	0.3	0.5	0.5	---	---
Geographers.....	0.1	0.1	---	---	0.1	0.1	0.1	0.2	---	---

See footnotes at end of table.

TABLE D: DISTRIBUTION OF SELECTED OCCUPATIONS IN ALL INDUSTRIES.  
PRIVATE INDUSTRY AND GOVERNMENT, 1957 AND 1962 (CONTINUED)

	All Industries		Private Industry		Government		Federal		State and Local	
	1957	1962	1957	1962	1957	1962	1957	1962	1957	1962
Historians.....	0.2	0.2	---	---	0.3	0.3	0.4	0.4	---	---
Intelligence Specialists.....	2.8	2.5	---	---	4.3	3.9	5.7	5.3	---	---
Political Scientists.....	0.3	0.4	(1)	(1)	0.4	0.6	0.6	0.8	---	---
Psychologists.....	0.5	0.6	0.5	0.5	0.5	0.7	0.6	0.9	0.2	0.3
Social, Welfare and Recreation Workers.	1.8	1.9	1.0	1.1	2.2	2.3	0.4	0.5	7.7	7.4
Social Scientists: Research, N.E.C....	0.2	0.2	0.4	0.5	(1)	(1)	---	---	0.1	0.1
Personnel: Employment Managers.										
Training Directors and Salary										
and Wage Administrators.....	2.8	2.4	1.6	1.4	3.5	3.0	4.6	4.1	0.1	0.1
Occupational Analysts.....	0.1	0.1	(1)	(1)	0.2	0.2	0.3	0.2	---	---
Procedure Writers.....	(1)	(1)	(1)	(1)	---	---	---	---	---	---
Patent and Trademark Examiners.....	1.2	1.2	---	---	1.8	1.8	2.5	2.5	---	---
Patent Searchers.....	(1)	(1)	0.1	0.1	---	---	---	---	---	---
Embalmers.....	0.3	0.3	1.0	0.8	(1)	(1)	(1)	(1)	---	---

1 Less than 0.05%.

2 Includes engineering and statistical draftsmen, since they were not differentiated by employers.

3 Includes mathematical and economic statisticians.

TABLE E: PERCENTAGE DISTRIBUTION OF SELECTED

		Grand Total All Industries	Total Private Industry	Construc- tion	Manufac- turing	Transportation and Communication Public Utilities	Trade
All Occupations.....	1957 1962	100.0 100.0	33.6 35.2	1.9 1.7	3.7 3.6	1.0 1.0	3.3 3.0
Accountants.....	1957 1962	100.0 100.0	28.2 31.1	3.7 3.5	1.9 2.1	2.4 2.6	5.2 4.8
Architects.....	1957 1962	100.0 100.0	40.5 44.7	----- -----	----- -----	----- -----	0.5 0.4
Engineers, Metallurgical.....	1957 1962	100.0 100.0	7.9 7.5	----- -----	----- -----	----- -----	----- -----
Engineers, Chemical.....	1957 1962	100.0 100.0	36.5 46.9	----- -----	----- 1.0	2.1 1.5	----- -----
Engineers, Civil.....	1957 1962	100.0 100.0	36.0 39.0	21.1 21.5	0.3 0.6	4.3 4.5	0.3 0.2
Engineers, Electrical and Electronic...	1957 1962	100.0 100.0	60.2 65.3	3.0 2.6	15.9 15.8	2.3 3.0	14.9 14.7
Engineers, Industrial.....	1957 1962	100.0 100.0	48.1 50.6	3.0 2.8	12.9 11.3	0.7 0.7	3.1 3.2
Engineers, Mechanical.....	1957 1962	100.0 100.0	38.4 43.6	7.1 7.3	9.8 10.0	1.0 1.5	4.8 4.2



## OCCUPATIONS, BY INDUSTRY 1957 AND 1962

Finance, Insurance and Real Estate	Service Industries	Total Government	Federal Government	State and Local Government	
1.0 0.9	22.7 25.0	66.4 64.8	49.8 47.4	16.6 17.3	1957 .....All Occupations 1962
3.6 3.9	14.4 14.2	71.8 68.9	68.9 65.9	2.9 3.0	1957 .....Accountants 1962
2.2 2.0	37.8 42.3	59.5 55.3	55.0 50.4	4.5 4.9	1957 .....Architects 1962
---	7.9 7.5	92.1 92.5	92.1 92.5	---	1957 .....Engineers, Metallurgical 1962
---	34.4 44.4	63.5 53.1	63.5 53.1	---	1957 .....Engineers, Chemical 1962
0.8 0.7	9.2 11.5	64.0 61.0	58.6 55.1	5.4 5.9	1957 .....Engineers, Civil 1962
---	24.1 29.2	39.8 34.7	39.5 34.3	0.3 0.4	1957 .....Engineers, Electrical and Electronic 1962
7.1 9.8	21.3 22.8	51.9 49.4	51.2 49.0	0.7 0.4	1957 .....Engineers, Industrial 1962
1.3 1.1	14.4 19.5	61.6 56.4	61.1 55.7	0.5 0.7	1957 .....Engineers, Mechanical 1962

TABLE E: PERCENTAGE DISTRIBUTION OF SELECTED

	Grand Total All Industries	Total Private Industry	Construc- tion	Manufac- turing	Transportation and Communications		
					Public Utilities	Trade	
Engineers, Mining.....	1957 100.0 1962 100.0	1.3 1.1	---	---	---	1.3 1.1	
Engineers, General.....	1957 100.0 1962 100.0	---	---	---	---	---	
Engineering Aides.....	1957 100.0 1962 100.0	39.6 42.0	---	14.6 10.9	0.3 0.4	---	
Specification Writers.....	1957 100.0 1962 100.0	100.0 100.0	---	41.2 42.4	---	2.0 3.0	
Surveyors.....	1957 100.0 1962 100.0	65.3 58.0	---	---	57.8 51.5	---	
Estimators.....	1957 100.0 1962 100.0	100.0 100.0	81.9 80.9	---	---	14.4 15.5	
Draftsmen <sup>1</sup> .....	1957 100.0 1962 100.0	64.5 66.5	7.0 5.8	2.7 8.8	6.7 5.4	1.5 1.2	
Artists.....	1957 100.0 1962 100.0	57.9 81.8	---	13.2 5.7	---	---	
Museum Curators.....	1957 100.0 1962 100.0	4.3 4.0	---	---	---	---	

See footnotes at end of table

6 OCCUPATIONS, BY INDUSTRY 1957 AND 1962 (CONTINUED)

Finance, Insurance and Real Estate	Service Industries	Total Government	Federal Government	State and Local Government	
—	—	98.7	98.7	—	1957 .....Engineers, Mining
—	—	98.9	98.9	—	1962
—	—	100.0	100.0	—	1957 .....Engineers, General
—	—	100.0	100.0	—	1962
—	24.7	60.4	51.0	9.4	1957 .....Engineering Aides
—	30.7	58.0	49.4	8.6	1962
1.9	54.9	—	—	—	1957 .....Specification Writers
1.5	53.1	—	—	—	1962
4.6	2.9	34.7	6.4	28.3	1957 .....Surveyors
4.0	2.5	42.0	12.5	29.5	1962
—	3.7	—	—	—	1957 .....Estimators
—	3.6	—	—	—	1962
0.1	39.5	35.5	32.3	3.2	1957 .....Draftsmen <sup>1</sup>
0.1	45.2	33.5	30.5	3.0	1962
—	44.7	42.1	39.5	2.6	1957 .....Artists
—	76.1	18.2	17.1	1.1	1962
—	4.3	95.7	95.7	—	1957 .....Museum Curators
—	4.0	96.0	96.0	—	1962

TABLE E: PERCENTAGE DISTRIBUTION OF SELECTED

	Grand Total All Industries	Total Private Industry	Construc- tion	Manufac- turing	Transportation and Communication Public Utilities	Trade
Writers, Editorialists, Newsmen and Correspondents.....	1957 100.0 1962 100.0	99.5 99.5	— —	32.2 27.3	0.1 0.1	0.5 0.4
Home Economists.....	1957 100.0 1962 100.0	17.6 21.3	— —	— —	15.5 19.4	1.4 1.3
Dietitians.....	1957 100.0 1962 100.0	42.4 41.0	— —	0.4 0.3	— —	1.9 1.6
Lawyers.....	1957 100.0 1962 100.0	28.3 33.8	1.0 0.9	(2) (2)	0.5 0.5	1.5 1.4
Librarians.....	1957 100.0 1962 100.0	11.0 11.0	— —	0.4 0.3	0.1 0.1	(2) (2)
Doctors.....	1957 100.0 1962 100.0	45.0 43.1	— —	0.2 0.1	0.4 0.4	0.1 0.1
Dentists.....	1957 100.0 1962 100.0	20.6 21.4	— —	0.7 0.6	— —	— —
Veterinarians.....	1957 100.0 1962 100.0	54.0 54.9	— —	— —	— —	— —

See footnotes at end of table.



## OCCUPATIONS, BY INDUSTRY 1957 AND 1962 (CONTINUED)

Finance, Insurance and Real Estate	Service Industries	Total Government	Federal Government	State and Local Government	
0.1 0.2	66.6 71.5	0.5 0.5	— —	0.5 0.5	1957 1962
					Writers, Editorialists, Newsmen and Correspondents
— —	0.7 0.6	82.4 78.7	82.4 78.7	— —	1957 1962
					Home Economists
— —	40.1 39.1	57.6 59.0	28.6 29.3	29.0 29.7	1957 1962
					Dietitians
6.9 6.7	18.4 24.3	71.7 66.2	70.5 64.7	1.2 1.5	1957 1962
					Lawyers
0.1 0.1	10.3 10.4	89.0 89.0	67.9 67.1	21.1 21.9	1957 1962
					Librarians
0.6 0.6	43.7 41.9	55.0 56.9	46.2 48.3	8.8 8.6	1957 1962
					Doctors
— —	19.9 20.8	79.4 78.6	56.7 57.2	22.7 21.4	1957 1962
					Dentists
— —	54.0 54.9	46.0 45.1	40.1 38.6	5.9 6.5	1957 1962
					Veterinarians

TABLE E: PERCENTAGE DISTRIBUTION OF SELECTED

		Grand Total All Industries	Total Private Industry	Construc- tion	Manufac- turing	Transportation Communi- cation and Public Utilities	Trade
Optometrists.....	1957 1962	100.0 100.0	100.0 100.0	— —	— —	— —	97.6 97.6
Pharmacists.....	1957 1962	100.0 100.0	94.6 94.5	— —	— —	— —	90.9 90.6
Medical Record Librarians.....	1957 1962	100.0 100.0	54.4 57.1	— —	— —	— —	— —
Nurses.....	1957 1962	100.0 100.0	59.9 60.9	— —	0.1 0.1	0.4 0.4	0.8 0.7
Occupational Therapists.....	1957 1962	100.0 100.0	26.5 28.1	— —	— —	— —	— —
Physical Therapists.....	1957 1962	100.0 100.0	43.1 46.5	— —	— —	— —	— —
Educational Therapists: Medical.....	1957 1962	100.0 100.0	— —	— —	— —	— —	— —
Medical Technicians.....	1957 1962	100.0 100.0	68.1 63.9	— —	— —	— —	— —
X-Ray Technicians.....	1957 1962	100.0 100.0	75.8 75.4	— —	— —	— —	— —

## OCCUPATIONS, BY INDUSTRY 1957 AND 1962 (CONTINUED)

Finance, Insurance and Real Estate	Service Industries	Total Government	Federal Government	State and Local Government	
----- -----	2.4 2.4	----- -----	----- -----	----- -----	1957 .....Optometrists 1962
----- -----	3.7 3.9	5.4 5.5	4.6 4.5	0.8 1.0	1957 .....Pharmacists 1962
----- -----	54.4 57.1	45.6 42.9	36.8 35.7	8.8 7.2	1957 .....Medical Record Librarians 1962
0.2 0.3	58.4 59.4	40.1 39.1	28.9 27.4	11.2 11.7	1957 .....Nurses 1962
----- -----	26.5 28.1	73.5 71.9	45.6 44.9	27.9 27.0	1957 .....Occupational Therapists 1962
----- -----	43.1 46.5	56.9 53.5	53.0 46.5	3.9 7.0	1957 .....Physical Therapists 1962
----- -----	----- -----	100.0 100.0	100.0 100.0	----- -----	1957 .....Educational Therapists: Medical 1962
----- -----	68.1 63.9	31.9 36.1	25.2 25.8	6.7 10.3	1957 .....Medical Technicians 1962
----- -----	75.8 75.4	24.2 24.6	15.2 15.9	9.0 8.7	1957 .....X-Ray Technicians 1962

TABLE E: PERCENTAGE DISTRIBUTION OF SELECTED

		Grand Total All Industries	Total Private Industry	Construc- tion	Manufac- turing	Transportation and Communica- tion and Public Utilities	Trade
Dental Technicians and Hygienists.....	1957 1962	100.0 100.0	76.9 81.9	— —	— —	— —	— —
College Teachers.....	1957 1962	100.0 100.0	71.0 71.8	— —	— —	— —	— —
Secondary Teachers.....	1957 1962	100.0 100.0	7.5 7.1	— —	— —	— —	— —
Counselors.....	1957 1962	100.0 100.0	— —	— —	— —	— —	— —
Elementary Teachers.....	1957 1962	100.0 100.0	0.7 0.6	— —	— —	— —	— —
Ungraded Teachers.....	1957 1962	100.0 100.0	82.4 81.8	— —	— —	— —	— —
Educational Therapists: Educational...	1957 1962	100.0 100.0	— —	— —	— —	— —	— —
Educational Specialists.....	1957 1962	100.0 100.0	100.0 100.0	— —	— —	— —	— —
Teachers and Educational Specialists, N.E.C.....	1957 1962	100.0 100.0	— —	— —	— —	— —	— —



45 OCCUPATIONS, BY INDUSTRY 1957 AND 1962 (CONTINUED)

Finance, Insurance and Real Estate	Service Industries	Total		Federal		State and Local	
		Government		Government		Government	
	76.9	23.1	23.1				1957 .....
	81.9	18.1	18.1				Dental Technicians and Hygienists
							1962
	71.0	29.0			29.0		1957 .....
	71.8	28.2			28.2		College Teachers
							1962
	7.5	92.5			92.5		1957 .....
	7.1	92.9			92.9		Secondary Teachers
							1962
		100.0			100.0		1957 .....
		100.0			100.0		Counselors
							1962
	0.7	99.3			99.3		1957 .....
	0.6	99.4			99.4		Elementary Teachers
							1962
	82.4	17.6			17.6		1957 .....
	81.8	18.2			18.2		Ungraded Teachers
							1962
		100.0			100.0		1957 ....Educational Therapists: Educational
		100.0			100.0		1962
							1957 .....
	100.0						Educational Specialists
	100.0						1962
		100.0			100.0		1957 .....
		100.0			100.0		Teachers and Educational
							Specialists, N.E.C.
							1962

TABLE E: PERCENTAGE DISTRIBUTION OF SELECTED

		Grand Total All Industries	Total Private Industry	Construc- tion	Manufac- turing	Transportation Communica- tion and Public Utilities	Trade
Musicians and Music Teachers.....	1957 1962	100.0 100.0	100.0 100.0	— —	— —	— —	21.3 19.7
Dancing Teachers.....	1957 1962	100.0 100.0	100.0 100.0	— —	— —	— —	— —
Agricultural Scientists.....	1957 1962	100.0 100.0	100.0 100.0	— —	— —	— —	— —
Astronomers.....	1957 1962	100.0 100.0	— —	— —	— —	— —	— —
Bacteriologists.....	1957 1962	100.0 100.0	11.1 12.3	— —	2.6 2.1	0.2 0.3	— —
Biologists.....	1957 1962	100.0 100.0	5.8 6.8	— —	— —	— —	— —
Botanists.....	1957 1962	100.0 100.0	0.7 4.1	— —	— —	— —	— —
Chemists.....	1957 1962	100.0 100.0	22.7 27.3	— —	3.6 3.2	0.2 0.3	2.6 3.5
Geologists.....	1957 1962	100.0 100.0	— —	— —	— —	— —	— —

## OCCUPATIONS, BY INDUSTRY 1957 AND 1962 (CONTINUED)

Finance, Insurance and Real Estate	Service Industries	Total Government	Federal Government	State and Local Government	
1957 1962	1957 1962	1957 1962	1957 1962	1957 1962	.....Musicians and Music Teachers
78.7 80.3					
1957 1962	100.0 100.0				.....Dancing Teachers
1957 1962					
1.1 2.1	98.9 97.9	98.5 96.4	0.4 1.5	1957 1962	.....Agricultural Scientists
1957 1962					
100.0 100.0	100.0 100.0	100.0 100.0		1957 1962	.....Astronomers
1957 1962					
8.3 9.9	88.9 87.7	86.4 84.4	2.5 3.3	1957 1962	.....Bacteriologists
1957 1962					
5.8 6.8	94.2 93.2	91.1 88.5	3.1 4.7	1957 1962	.....Biologists
1957 1962					
0.7 4.1	99.3 95.9	98.5 91.7	0.8 4.2	1957 1962	.....Botanists
1957 1962					
16.3 20.3	77.3 72.7	76.8 72.0	0.5 0.7	1957 1962	.....Chemists
1957 1962					
100.0 100.0	100.0 100.0	100.0 100.0		1957 1962	.....Geologists

TABLE E: PERCENTAGE DISTRIBUTION OF SELECTED

		Grand Total All Industries	Total Private Industry	Construc- tion	Manufac- turing	Transportation and Communica- tion and Public Utilities	Trade
Geophysicists.....	1957	100.0	0.1	-----	-----	-----	-----
	1962	100.0	0.1	-----	-----	-----	-----
Meteorologists.....	1957	100.0	0.3	-----	-----	-----	-----
	1962	100.0	0.2	-----	-----	-----	-----
Pharmacologists.....	1957	100.0	6.4	-----	-----	-----	-----
	1962	100.0	11.1	-----	-----	-----	-----
Physicists.....	1957	100.0	9.6	-----	1.5	-----	-----
	1962	100.0	10.9	-----	1.3	-----	-----
Zoologists.....	1957	100.0	-----	-----	-----	-----	-----
	1962	100.0	-----	-----	-----	-----	-----
Physical Scientists: Research, N.E.C..	1957	100.0	75.0	-----	-----	-----	-----
	1962	100.0	72.7	-----	-----	-----	-----
Laboratory Technicians and Assistants..	1957	100.0	27.5	-----	5.8	0.5	4.3
	1962	100.0	28.0	-----	4.8	0.8	3.4
Mathematicians.....	1957	100.0	39.7	-----	9.1	-----	-----
	1962	100.0	48.9	-----	8.4	-----	-----

See footnotes at end of table.



## OCCUPATIONS, BY INDUSTRY 1957 AND 1962 (CONTINUED)

Finance, Insurance and Real Estate	Service Industries	Total		Federal		State and Local	
		Government	Government	Government	Government	Government	Government
.....	0.1	99.9	99.9	99.9	.....	.....	1957 .....
.....	0.1	99.9	99.9	99.9	.....	.....	1962 .....
.....	0.3	99.7	99.7	99.7	.....	.....	1957 .....
.....	0.2	99.8	99.8	99.8	.....	.....	1962 .....
.....	6.4	93.6	87.2	87.2	6.4	.....	1957 .....
.....	11.1	88.9	77.8	77.8	11.1	.....	1962 .....
.....	8.1	90.4	90.4	89.1	(2)	.....	1957 .....
.....	9.6	89.1	89.1	89.1	.....	.....	1962 .....
.....	.....	100.0	100.0	100.0	3.6	.....	1957 .....
.....	.....	100.0	96.4	96.4	.....	.....	1962 .....
.....	75.0	25.0	.....	.....	25.0	.....	1957 .....
.....	72.7	27.3	.....	.....	27.3	.....	1962 .....
.....	16.8	72.5	72.4	72.4	0.1	.....	1957 .....
.....	18.9	72.0	71.8	71.8	0.2	.....	1962 .....
.....	0.1	.....	.....	.....	.....	.....	1957 .....
.....	0.1	.....	.....	.....	.....	.....	1962 .....
0.9	29.7	60.3	60.3	51.0	0.1	.....	1957 .....
0.9	39.6	51.1	51.1	51.0	0.1	.....	1962 .....

Physical Scientists: Research, N.E.C.

Laboratory Technicians and Assistants

Mathematicians

Geophysicists

Meteorologists

Pharmacologists

Physicists

Zoologists

TABLE E: PERCENTAGE DISTRIBUTION OF SELECTED

		Grand Total All Industries	Total Private Industry	Construc- tion	Manufac- turing	Transportation and Public Utilities	Trade
Statisticians <sup>3</sup> .....	1957 1962	100.0 100.0	13.8 16.3	— —	0.1 0.1	0.2 0.1	4.6 3.7
Programmers.....	1957 1962	100.0 100.0	100.0 100.0	— —	— —	— —	75.0 69.4
Economists and Business and Industrial Analysts.....	1957 1962	100.0 100.0	8.9 11.2	— —	0.1 0.1	— —	— —
Actuaries.....	1957 1962	100.0 100.0	55.7 42.4	— —	— —	— —	— —
Anthropologists and Archaeologists.....	1957 1962	100.0 100.0	— —	— —	— —	— —	— —
Archivists.....	1957 1962	100.0 100.0	1.4 1.9	— —	— —	— —	— —
Geographers.....	1957 1962	100.0 100.0	— —	— —	— —	— —	— —
Historians.....	1957 1962	100.0 100.0	— —	— —	— —	— —	— —

See footnotes at end of table.

## OCCUPATIONS, BY INDUSTRY 1957 AND 1962 (CONTINUED)

Finance, Insurance and Real Estate	Service Industries	Total Government	Federal Government	State and Local Government	
0.2	8.7	86.2	85.5	0.7	1957 ..... Statisticians <sup>3</sup>
0.4	12.0	83.7	82.6	1.1	1962
25.0	—	—	—	—	1957 ..... Programmers
30.6	—	—	—	—	1962
0.2	8.6	91.1	91.1	$\left\{ \begin{smallmatrix} 2 \\ 2 \end{smallmatrix} \right\}$	1957 ..... Economists and Business and
0.2	10.9	86.8	86.8		1962 ..... Industrial Analysts
55.7	—	44.3	42.0	2.3	1957 ..... Actuaries
42.4	—	57.6	55.3	2.3	1962
—	—	100.0	100.0	—	1957 ..... Anthropologists and Archaeologists
—	—	100.0	100.0	—	1962
—	1.4	98.6	98.6	—	1957 ..... Archivists
—	1.9	98.1	98.1	—	1962
—	—	100.0	100.0	—	1957 ..... Geographers
—	—	100.0	100.0	—	1962
—	—	100.0	100.0	—	1957 ..... Historians
—	—	100.0	100.0	—	1962

TABLE E: PERCENTAGE DISTRIBUTION OF SELECTED

		Grand Total All Industries	Total Private Industry	Construc- tion	Manufac- turing	Transportation and Communica- tion and Public Utilities	Trade
Intelligence Specialists.....	1957 1962	100.0 100.0	— —	— —	— —	— —	— —
Political Scientists.....	1957 1962	100.0 100.0	4.1 2.6	— —	— —	— —	— —
Psychologists.....	1957 1962	100.0 100.0	31.9 26.6	— —	— —	0.2 0.1	— —
Social, Welfare and Recreation Workers..	1957 1962	100.0 100.0	19.2 20.3	— —	— —	— —	— —
Social Scientists: Research, N.E.C....	1957 1962	100.0 100.0	88.4 88.3	— —	— —	— —	— —
Personnel: Employment Managers, Training Directors and Salary and Wage Administrators.....	1957 1962	100.0 100.0	19.2 20.3	1.0 1.0	1.9 1.9	1.2 1.5	6.7 7.1
Occupational Analysts.....	1957 1962	100.0 100.0	— —	— —	— —	— —	— —
Procedure Writers.....	1957 1962	100.0 100.0	100.0 100.0	— —	— —	— —	— —

# 5 OCCUPATIONS, BY INDUSTRY 1957 AND 1962 (CONTINUED)

Finance, Insurance and Real Estate	Service Industries	Total Government	Federal Government	State and Local Government		
—	—	100.0	100.0	—	1957	Intelligence Specialists
—	—	100.0	100.0	—	1962	
—	4.1	95.9	95.9	—	1957	Political Scientists
—	2.6	97.4	97.4	—	1962	
—	31.7	68.1	60.7	7.4	1957	Psychologists
—	26.5	73.2	66.0	7.4	1962	
—	19.2	80.8	10.6	70.2	1957	Social, Welfare and Recreation Workers
—	20.3	79.7	12.0	67.7	1962	
—	88.4	11.6	—	11.6	1957	Social Scientists: Research, N.E.C.
—	88.3	11.7	—	11.7	1962	
3.3	5.1	80.8	80.2	0.6	1957	Personnel: Employment Managers, Training Directors and Salary and Wage Administrators
3.3	5.5	79.7	79.1	0.6	1962	
—	—	100.0	100.0	—	1957	Occupational Analysts
—	—	100.0	100.0	—	1962	
100.0	—	—	—	—	1957	Procedure Writers
100.0	—	—	—	—	1962	



TABLE E: PERCENTAGE DISTRIBUTION OF SELECTED

	Grand Total All Industries	Total Private Industry	Construc- tion	Manufac- turing	Transportation Communica- tion and Public Utilities	Trade
Patent and Trade-Mark Examiners.....	1957 100.0 1962 100.0	100.0	100.0	100.0	100.0	100.0
Patent Searchers.....	1957 100.0 1962 100.0	100.0 100.0	100.0 100.0	100.0 100.0	100.0 100.0	100.0 100.0
Embalmers.....	1957 100.0 1962 100.0	99.7 99.7	100.0 100.0	100.0 100.0	100.0 100.0	100.0 100.0

1 Includes engineering and statistical draftsmen since they were not differentiated by employers.

2 Less than 0.05%.

3 Includes mathematical and economical statisticians.

5 OCCUPATIONS, BY INDUSTRY 1957 AND 1962 (CONTINUED)

Finance, Insurance and Real Estate	Service Industries	Total Government	Federal Government	State and Local Government		
		100.0	100.0		1957	Patent and Trade-Mark Examiners
		100.0	100.0		1962	
	100.0				1957	Patent Searchers
	100.0				1962	
	99.7	0.3	0.3		1957	Embalmers
	99.7				1962	

TABLE F: TOTAL EMPLOYMENT AND EMPLOYMENT OF FEMALES IN SELECTED OCCUPATIONS.

	All Industries		Percentage of all Females	Private Industry		Service Industries
	Total	Female		Female	Female	
All Industries						
Total Employment.....	663,300					6,417
Total Employment for Occupations.....	93,250	26,057	100.0	7,211		
Accountants.....	5,738	591	2.3	232		81
Architects.....	598	6	(e)	1		1
Engineers, Metallurgical.....	101	3	(e)	—		—
Engineers, Chemical.....	340	1	(e)	—		—
Engineers, Civil.....	2,722	6	(e)	1		—
Engineers, Electrical and Electronic.....	4,925	19	0.1	12		2
Engineers, Mechanical.....	4,711	26	0.1	13		11
Engineers, General.....	1,305	5	(e)	—		6
Engineering Aides.....	1,269	27	0.1	9		—
Specification Writers.....	51	4	(e)	4		—
Draftsmen.....	3,464	462	1.8	216		144
Artists.....	38	11	(e)	2		1
Museum Curators.....	69	10	(e)	—		—
Writers, Editorialists, Newsmen and Correspondents.....	3,458	647	2.5	636		463
Home Economists.....	148	144	0.6	26		1
Dietitians.....	262	261	1.0	111		105
Lawyers.....	5,570	293	1.1	44		9

See footnotes at end of table.

FOR ALL INDUSTRIES AND BY INDUSTRY IN THE METROPOLITAN AREA, DECEMBER 1957

All Other Private Industries a b	Total Government	Federal Government	State and Local Government	All Industries	
				Total Employment	Total Employment for Occupations
Female	Female	Female	Female		
c 794	18,846	8,225	10,621	.....Total Employment	.....Total Employment for Occupations
d 151	359	348	11	.....Accountants	.....Architects
.....	5	5	.....	.....Engineers, Metallurgical	.....Engineers, Chemical
.....	3	3	.....	.....Engineers, Civil	.....Engineers, Electrical and Electronic
1	1	3	2	.....Engineers, Mechanical	.....Engineers, General
10	5	7	.....	.....Engineers, General	.....Emergency Aides
2	13	5	.....	.....Specification Writers	.....Draftsmen
3	5	18	.....	.....	.....
4	18	.....	.....	.....	.....
e 72	246	239	7	.....	.....
.....	9	8	1	.....Artists	.....Museum Curators
1	10	10	.....	.....	.....
h 173	11	.....	11	.....Writers, Editorialists, Newsmen	.....and Correspondents
.....	.....	.....	.....	.....Home Economists	.....Dietitians
i 25	118	118	.....	.....	.....
j 6	150	74	76	.....	.....
.....	.....	.....	.....	.....	.....
k 35	249	247	2	.....	.....Lawyers

TABLE F: TOTAL EMPLOYMENT AND EMPLOYMENT OF FEMALES IN SELECTED OCCUPATIONS, FOR

	All Industries		Percentage of all Females	Private Industry		Service Industries
	Total	Female		Female	Female	
Librarians.....	2,199	1,694	6.5	177	168	
Doctors.....	2,111	222	0.9 (e)	114	114	
Dentists.....	141	2		49	10	
Pharmacists.....	1,105	57	0.2	30	30	
Medical Record Librarians.....	57	56	19.5	3,096	3,015	
Nurses.....	5,129	5,094	0.2	18	18	
Occupational Therapists.....	68	65	0.2	18	18	
Physical Therapists.....	51	39	0.2	428	428	
Medical Technicians.....	1,059	664	2.5	156	156	
X-Ray Technicians.....	289	169	0.6	65	65	
Dental Technicians and Hygienists.....	294	78	0.3			
College Teachers.....	3,941	579	2.2	344	344	
Secondary Teachers.....	5,204	3,128	12.0 (e)	133	133	
Counselors.....	57	7		39	39	
Elementary Teachers.....	5,918	5,442	20.9	78	78	
Ungraded Teachers.....	307	95	0.4 (e)			
Educational Therapists: Educational... Teachers and Educational Specialists, N.E.C.....	34 1,066	5 248	1.0			
Musicians and Music Teachers.....	254	60	0.2	60	29	
Dancing Teachers.....	700	345	1.3	345	345	
Agricultural Scientists.....	465	3	(e) (e)			
Astronomers.....	38	8	0.4	4	4	
Bacteriologists.....	470	108				

See footnotes at end of table.



56 ALL INDUSTRIES AND BY INDUSTRY IN THE METROPOLITAN AREA, DECEMBER 1957 (CONTINUED)

All Other Private Industries a b	Total Government		Federal Government		State and Local Government	
Female	Female		Female		Female	
1 9	1,517		1,099		418	
	.....Librarians					
	108		66		42	
	2		6		2	
II 39	8		21		2	
	26		1,418		5	
II 81	1,998		28		580	
	47		20		19	
	21		197		1	
	236		9		39	
	13		13		4	
	13				.....X-Ray Technicians	
					.....Medical Technicians	
					.....Dental Technicians and Hygienists	
	235					
	2,995				.....College Teachers	
	7				.....Secondary Teachers	
	5,403				.....Counselors	
	17				.....Elementary Teachers	
	5		5		.....Ungraded Teachers	
	248		248		.....Educational Therapists: Educational Teachers and Educational Specialists, N.E.C.	
III 31					.....Musicians and Music Teachers	
					.....Dancing Teachers	
	3		3		.....Agricultural Scientists	
	8		8		.....Astronomers	
	104		98		.....Bacteriologists	

TABLE F: TOTAL EMPLOYMENT AND EMPLOYMENT OF FEMALES IN SELECTED OCCUPATIONS, FOR

	All Industries		Percentage of all Females	Private Industry		Service Industries	
	Total	Female		Female	Female	Female	Female
Biologists.....	381	123	0.5	3	3	3	3
Botanists.....	135	21	0.1	—	—	—	—
Chemists.....	1,837	317	1.2	94	94	94	94
Geologists.....	354	55	0.2	—	—	—	—
Geophysicists.....	1,430	60	0.2	—	—	—	—
Meteorologists.....	358	6	(e)	—	—	—	—
Pharmacologists.....	47	5	(e)	—	—	—	—
Physicists.....	2,025	68	0.3	—	—	—	—
Zoologists.....	27	5	(e)	13	13	13	13
Physical Scientists: Research, N.E.C....	40	2	(e)	—	—	—	—
Laboratory Technicians and Assistants...	1,313	318	1.2	110	110	72	72
Mathematicians.....	895	214	0.8	45	45	39	39
Statisticians.....	1,589	366	1.4	35	35	21	21
Economists and Business and Industrial Analysts.....	5,483	857	3.3	61	61	55	55
Actuaries.....	88	5	(e)	—	—	—	—
Anthropologists and Archaeologists.....	17	1	(e)	—	—	—	—
Archivists.....	219	52	0.2	—	—	—	—
Geographers.....	69	17	0.1	—	—	—	—
Historians.....	191	27	0.1	—	—	—	—
Intelligence Specialists.....	2,642	661	2.5	—	—	—	—
Political Scientists.....	290	35	0.1	3	3	3	3
Psychologists.....	501	85	0.3	12	12	12	12
Social, Welfare and Recreation Workers...	1,709	1,032	4.0	220	220	220	220
Social Scientists: Research, N.E.C.....	172	15	0.1	11	11	11	11

See footnotes at end of table.

All Other Private Industries <sup>a</sup>	b	Total Government	Federal Government	State and Local Government
Female	Female	Female	Female	
.....	120	117	3	
.....	21	21	.....	
.....	223	219	4	
.....	55	55	.....	
.....	60	60	.....	
.....	6	6	.....	
.....	5	5	.....	
.....	55	55	.....	
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TABLE F: TOTAL EMPLOYMENT AND EMPLOYMENT OF FEMALES IN SELECTED OCCUPATIONS, FOR

	All Industries		Percentage of all Females	Private Industry		Service Industries
	Total	Female		Total	Female	
Personnel: Employment Managers, Training Directors and Salary and Wage Administrators.....	2,657	940	3.6	133	46	
Occupational Analysts.....	124	40	0.2			
Patent and Trademark Examiners.....	1,143	36	0.1			
Embalmers.....	311	10	(e)	10	10	

<sup>a</sup> All Other Private Industry includes Manufacturing; Construction; Transportation, Communication and Public Utilities; Trade; and Finance, Insurance and Real Estate.

<sup>b</sup> Unless footnoted, this figure applies solely to Manufacturing.

<sup>c</sup> Manufacturing 282; Construction 54; Transportation, Communication and Public Utilities 108; Trade 251; and Finance, Insurance and Real Estate 99.

<sup>d</sup> Manufacturing 21; Construction 54; Transportation, etc. 6; Trade 36; Finance, etc. 34.

<sup>e</sup> Less than 0.05%.

<sup>f</sup> Includes engineering and statistical draftsmen, since they were not differentiated by employees.

<sup>g</sup> Manufacturing 13; Transportation, etc. 53; Trade 4; and Finance, etc. 2.

<sup>h</sup> Manufacturing 160; Transportation, etc. 1; and Trade 12.

<sup>i</sup> Transportation, etc. 23; Trade 2.

<sup>j</sup> Manufacturing 1; Trade 5.

All Other Private Industries a b	Total Government	Federal Government	State and Local Government	
	Female	Female	Female	
t 87	807	802	5	Personnel: Employment Managers, Training Directors and Salary and Wage Administrators Occupational Analysts
	40	40		.....Patent and Trademark Examiners
	36	36		.....Embalmers
k Transportation, etc. 1; Finance, etc. 34.				
l Manufacturing 5; Transportation, etc. 2; Trade 1; and Finance, etc. 1.				
m Trade only.				
n Manufacturing 7; Transportation, etc. 22; Trade 40; Finance, etc. 12.				
o Manufacturing 25; Trade 12; Finance, etc. 1.				
p Manufacturing 4; Finance, etc. 2.				
q Includes mathematical and economic statisticians.				
r Trade 12; Finance, etc. 2.				
s Finance, Insurance and Real Estate only.				
t Manufacturing 25; Trade 57; Finance, etc. 5.				



TABLE G: DEMAND FOR SELECTED OCCUPATIONS IN THE WASHINGTON, D.C. METROPOLITAN AREA BY 1962

	Employment 1957	Current Vacancies 1957	Demand		Total Requirements 1962
			Growth Needs 1957-1962	Replacement Needs 1957-1962	
Total Occupations.....	93,250	1,202	22,172	9,833	33,207
Accountants.....	5,738	9	859	472	1,340
Architects.....	598	1	55	52	108
Engineers, Metallurgical.....	101	—	33	5	38
Engineers, Chemical.....	340	78	189	18	285
Engineers, Civil.....	2,722	46	260	249	555
Engineers, Electrical and Electronic...	4,925	80	1,306	300	1,686
Engineers, Industrial.....	602	—	90	36	126
Engineers, Mechanical.....	4,711	134	970	353	1,457
Engineers, Mining.....	76	—	15	6	21
Engineers, General.....	1,305	—	783	98	881
Engineering Aides.....	1,269	12	776	72	860
Specification Writers.....	51	1	15	2	18
Surveyors.....	173	—	27	10	37
Estimators.....	160	—	8	13	21
Draftsmen.....	3,464	23	1,384	205	1,612
Artists.....	38	—	50	3	53
Museum Curators.....	69	—	6	4	10
Writers, Editorialists, Newsmen and Correspondents.....	3,458	21	989	200	1,210
Home Economists.....	148	2	7	33	42
Dietitians.....	262	4	45	59	108

See footnotes at end of table.

5 TABLE G: DEMAND FOR SELECTED OCCUPATIONS IN THE WASHINGTON, D.C. METROPOLITAN AREA BY 1962 (CONTINUED)

	Employment 1957	Current Vacancies 1957	Demand		Total Requirements
			Growth Needs 1957-1962	Replacement Needs <sup>1</sup> 1957-1962	
Lawyers.....	5,570	3	625	406	1,034
Librarians.....	2,199	39	471	554	1,064
Doctors.....	2,111	15	310	124	449
Dentists.....	141	3	27	12	42
Veterinarians.....	187	1	46	6	53
Optometrists.....	124	—	2	7	9
Pharmacists.....	1,105	2	122	97	221
Medical Record Librarians.....	57	2	13	14	29
Nurses.....	5,199	403	1,370	1,235	3,008
Occupational Therapists.....	68	5	21	15	41
Physical Therapists.....	51	7	20	12	39
Educational Therapists: Medical.....	3	—	1	—	1
Medical Technicians.....	1,059	13	83	239	335
X-Ray Technicians.....	289	—	45	65	110
Dental Technicians and Hygienists.....	294	30	120	20	170
College Teachers.....	3,941	5	563	358	926
Secondary Teachers.....	5,204	22	2,045	1,201	3,268
Counselors.....	57	—	9	5	14
Elementary Teachers.....	5,918	4	1,439	1,370	2,813
Ungraded Teachers.....	307	3	61	24	88
Educational Therapists: Educational.....	34	—	10	3	13
Educational Specialists.....	16	1	—	1	2
Teachers and Educational Specialists, N.E.C.....	1,066	—	224	59	283
Musicians and Music Teachers.....	254	—	20	17	37

See footnotes at end of table.

TABLE G: DEMAND FOR SELECTED OCCUPATIONS IN THE WASHINGTON, D.C. METROPOLITAN AREA BY 1962 (CONTINUED)

	Employment 1957	Current Vacancies 1957	Demand		Total Requirements 1962
			Growth Needs 1957-1962	Replacement Needs <sup>1</sup> 1957-1962	
Dancing Teachers.....	700	—	255	83	338
Agricultural Scientists.....	465	1	10	16	27
Astronomers.....	38	—	8	2	10
Bacteriologists.....	470	16	106	38	160
Biologists.....	381	—	90	31	121
Botanists.....	135	—	10	6	16
Chemists.....	1,837	67	612	97	776
Geologists.....	354	—	37	12	49
Geophysicists.....	1,430	—	286	48	334
Meteorologists.....	358	—	56	12	68
Pharmacologists.....	47	—	16	3	19
Physicists.....	2,025	—	801	108	909
Zoologists.....	27	—	1	1	2
Physical Scientists: Research, N.E.C.	40	2	15	2	19
Laboratory Technicians and Assistants..	1,313	3	509	48	560
Mathematicians.....	895	1	375	39	415
Statisticians <sup>2</sup> .....	1,589	2	385	119	506
Programmers.....	24	3	25	—	28
Economists and Business and Industrial Analysts.....	5,483	28	1,263	419	1,710
Actuaries.....	88	1	44	6	51
Anthropologists and Archaeologists.....	17	—	4	1	5
Archivists.....	219	—	48	14	62

See footnotes at end of table.

TABLE G: DEMAND FOR SELECTED OCCUPATIONS IN THE WASHINGTON, D.C. METROPOLITAN AREA BY 1962 (CONTINUED)

	Employment 1957	Current Vacancies 1957	Demand		Total Requirements 1962
			Growth Needs 1957-1962	Replacement Needs <sup>1</sup> 1957-1962	
Geographers.....	69	—	15	6	21
Historians.....	191	—	19	14	33
Intelligence Specialists.....	2,642	—	271	202	473
Political Scientists.....	290	—	166	20	186
Psychologists.....	501	2	247	26	275
Social, Welfare and Recreation Workers.....	1,709	94	475	99	668
Social Scientists: Research, N.E.C....	172	6	41	10	57
Personnel: Employment Managers, Training Directors and Salary and Wage Administrators.....	2,657	6	177	164	347
Occupational Analysts.....	124	—	12	8	20
Procedure Writers.....	2	1	4	—	5
Patent and Trade-mark Examiners.....	1,143	—	240	105	345
Patent Searchers.....	40	—	—	8	8
Embalmers.....	311	—	35	32	67

<sup>1</sup> Replacement needs are based on male retirements and deaths. In primarily female occupations, separation rates for females are used. See "Methodology."

<sup>2</sup> Includes engineering and statistical draftsmen, since they were not differentiated by employers.

<sup>3</sup> Includes mathematical and economic statisticians.





## APPENDIX A: METHODOLOGY

### I. Survey of Selected Professional, Scientific and Technical Occupations.

The United States Employment Service for the District of Columbia - in cooperation with the Maryland Department of Employment Security and the Virginia Unemployment Compensation Commission - undertook this study in order to estimate employment opportunities in certain professional, scientific and technical occupations as listed in the Dictionary of Occupational Titles in the metropolitan area.<sup>1</sup>

A survey was conducted by the District of Columbia Employment Service to: (1) estimate employment in these occupations in 1957, and project employment estimates for these workers in 1962 for the entire metropolitan area, and (2) establish an Index of professional, scientific and technical occupations in the District, so that the local Employment Service Office could more efficiently perform its assigned functions.

The survey which resulted in this publication was based on a sample of establishments in the District of Columbia, Montgomery and Prince Georges' Counties in Maryland, and Arlington and Fairfax Counties and the cities of Alexandria and Falls Church in Virginia.<sup>2</sup> Since like surveys were conducted in the District, Maryland and Virginia, only the District's survey will be explained in detail.<sup>3</sup>

As a base, more than 3200 employers in the District covered by unemployment insurance were screened for the survey.<sup>4</sup> The long survey form (DCES-6) was sent to all firms employing 100 or more workers; to 20% of the establishments with 20-99 employees; and to 4% of those with 6-19 employees.<sup>5</sup> The remaining firms in the District were then sent the short form (DCES-5) so that their data would be available for the Professional Occupational Index. Second solicitation letters were sent when necessary, and were followed up by telephone calls to all firms employing 100 or more who had not replied, and to a very large pro-

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<sup>1</sup> Selection detailed on pages 69 and 70.

<sup>2</sup> Sample forms for all surveys, instructions and covering letters follow this section on Methodology.

<sup>3</sup> For the metropolitan area, 3800 firms form the base. Overall returns approximated 60% of the sample group.

<sup>4</sup> Approximately 17,000 firms are on the Unemployment Insurance roster. Eliminated from the survey, by visual inspection of the U.I. records, were firms employing less than 6 workers and those which because of their activities -- liquor stores, filling stations, retail grocers, etc. -- (by checking their 3 and 4 digit industrial codes) were not likely to employ workers in the surveyed occupations. The remainder numbered approximately 3200.

<sup>5</sup> Every effort was made, prior to mailing the questionnaires, to eliminate all but the main office of multi-establishment employers, whether the firms were located solely in the District or crossed the Maryland or Virginia state lines, i.e., the Potomac Electric Power Company, High's Dairy, Department and chain stores, etc.



portion of the remaining sample firms.

In addition to the Unemployment Insurance records, additional firms were gleaned from the Local Employment Office "major market" listing, ES-330 reports, the Board of Trade index, and the telephone directory in order to assure inclusion of non-covered firms such as hospitals, educational and research institutions, etc. The District of Columbia Government was circularized, and the United States Civil Service Commission, in the process of conducting its own survey of occupations of Federal white-collar workers for February 1957, provided the figures for the Federal government.

Employers were asked for their current total employment figures, and the number of employees in each of the occupations listed on the back of the instruction sheet (with a request to add any other professionals they might employ). They were further requested to list the number of females in these occupations, the age breakdown in the occupations, and current job vacancies. Then, on the assumption "that current national economic conditions would continue without significant change throughout the period covered," they were asked to estimate employment in 1962 for their firms as a whole, and for each occupation they listed.

In the District, approximately 70% of all questionnaires sent to the sample group were returned. In the case of a non-responding firm, it was possible to substitute data from a firm which had replied on the short form - with the same industrial code and the same approximate employment - since a telephone call elicited the information missing from the short form in almost all instances.

The sample was then inflated to the known universe. First, by using the 3-digit Standard Industrial Classification Codes,<sup>6</sup> and then for 2-digit industries or combinations of industries as seemed most useful.<sup>7</sup> This analysis covers eight industrial groups: construction (S.I.C. Code 15-17); manufacturing (20-39); transportation, communications and public utilities (40-48 including the non-covered interstate railroads); wholesale and retail trade (50-59); finance, insurance and real estate (the 60's); the service industries and miscellaneous (07, 14, and the 70's and 80's); and government: federal, state and local (94).

Originally, certain occupations were listed on the back of the instruction sheet accompanying the survey questionnaire. Employers

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<sup>6</sup> SSB-SIC codes, revised 1945.

<sup>7</sup> The inflated totals, by industry, being comparable to the reports of total employment as then published in "Labor Market News," U.S. Department of Labor. In February 1959, "Labor Market News" began using the new industrial classification system (SIC 1957) thereby revising the basis for the series. Substantial changes in the definition of industries have now resulted in a lack of historical continuity for comparison purposes -- although the Agency plans to revise the series as is feasible.





were asked for information for such employees and for any other professionals on their payrolls. The occupations coded in the Dictionary of Occupational Titles from 0-01 through 0-69, and 0-94 and 0-95, with some exceptions, were included. Excluded were clergymen (0-08), because of the nature of the occupation; aviators, decorators and window dressers, commercial artists, dancers - except for dancing teachers, and designers (0-41-46); photographers, athletes, etc., radio operators, showmen and some miscellaneous technicians (0-56 through 0-62 and 0-66) because these occupations do not involve preparation which is considered "professional, scientific or technical" for our purposes. Managerial, administrative and official occupations were entirely eliminated because these categories cover such a wide range of skills -- from the manager of a small business to an executive with extensive experience and training -- as to be meaningless for our purposes. In all, a total of 79 occupations or occupational groups were included in the study.

## TABLES

Table A, Employment in the Metropolitan Area, by Industries, December 1949 to December 1957, Projected for 1962 (in thousands) consists of data from the Labor Market News.<sup>8</sup> The projections for 1962 are based on the employers' estimates, inflated for the universe<sup>9</sup> -- but are limited in that the growth estimate is for established firms only. No projections were made for new firms or industries which are expected to locate here and swell employment.

Table B, Employment in All Industries and in the Private and Public Sectors for Selected Occupations in the Metropolitan Area, December 1957 and 1962: Herein are the estimates of the number of workers in each of the occupations in the survey for 1957. The figures were first inflated for each occupation in each industry from the employers' reports of actual employment in the sample.<sup>9</sup> By adding the estimated totals in each occupation for each industry we get the estimated grand total of the numbers employed in each occupation for 1957. For 1962, the employers' estimates of their total employment and employment by occupation in each industry were inflated for the universe and were totaled by industry for the projected employment figures.<sup>9</sup> In this table, data are presented for each of the 79 occupations surveyed by major industry sectors, i.e., all industries; total private industry -- with a break for (a) the service industries and (b) all other private industry; total government -- with a break for (a) federal and (b) state and local government. Extensive work-sheets contain the data for each industrial group.

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<sup>8</sup> U.S. Department of Labor, Employment Service for the District of Columbia, with the adoption of the New Standard Industrial Classification Manual - 1957 in January 1959, the series at present, is no longer comparable.

<sup>9</sup> Subject to industry adjustment factors derived from the employers' 1957 estimates and actual employment in 1957.





Table C, Total Employment and Employment in the 79 Selected Occupations, in All Industries and by Industry in the Metropolitan Area, December 1957 and 1962: This table contains totals only of employment in the eight industrial groups mentioned above, and a total for all 79 occupations in each of the eight industrial groups. These totals were derived from the work-sheets prepared for Table B.

Table D, Distribution of Selected Occupations in All Industries, Private Industry and Government (Federal, State and Local) 1957 and 1962. This table shows the percentage each of the 79 occupations is of the estimated total employed in all these occupations in each industry group as shown in Table B, for 1957 and 1962. Because the estimated current distribution is significantly different in the private industry segment of the economy from the array in government -- and since the percentage varies in the two break-downs we have in the government sector -- these further refinements are presented.

In Table E, Percentage Distribution of Selected Occupations, by Industry, 1957 and 1962, each occupation is treated as a universe. These data are taken from the work-sheets from which Table B was derived. By applying the percentages in Table E to the absolute figures in Table B (All Industries) for a particular occupation, the reader can get the data for the 8-industry break.

Table F deals with women in the selected occupations. While an increase is expected in the number of women in the labor force in the future, since the survey questionnaire called for data on females for 1957 only, it was impossible to project future employment for women in these professional, scientific and technical occupations. No one is able to estimate if additional qualified women would seek to enter these occupations in smaller, equal or greater proportion to their present employment. Secondly, females must overcome employer resistance to their employment in some of these occupations in order to enter them. Some employers indicated, in telephone conversation, that they had no bias against women in these occupations. Although it is felt that this is indicative of the present trend, no sampling on this question was attempted. Despite the often significant difference between the concentration of women in a specific occupation (and in the different industries) as contrasted to all workers in that occupation in the industries, women will have to use the available data for all in the occupations in projecting their employment prospects. Table F, Total Employment and Employment of Females in Selected Occupations for All Industries and by Industry in the Metropolitan Area, December 1957, presents the total employment in each occupation -- from Table B; the inflated figure, by industry and for all industry, of total female employment in each occupation -- derived as were the figures for Table B.<sup>9</sup> Total female employment in each occupation is

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<sup>9</sup> Subject to industry adjustment factors derived from the employers' 1957 estimates and actual employment in 1957.



the aggregate of the totals estimated for each industrial group in the survey. The column headed "Percentage of All Females" details the concentration each occupation is of the total of all females employed in the 68 occupations in which they were reported (equivalent to the "All Industries" column in Table D).

Table G, Demand for Selected Occupations in the Washington, D.C. Metropolitan Area by 1962, utilizes the remaining data called for in the survey form. Employers were asked to give an age break-down for all the people in the professional occupations they listed. This, however, was not requested on a male-female basis, and the figures are for all in the occupations. In estimating needs for the future, known rates of separation due to death and retirement were applied to the age breakdown, as estimated from the employers' reports, by occupation, as though they consisted of males only.<sup>10</sup> Exceptions to this rule were those occupations which are predominantly female (home economists, dieticians, librarians, elementary teachers, nurses, etc.) to which separation rates for the female labor force were applied.<sup>11</sup> In the few occupations where each sex constituted about half the total in the occupation, the age breakdown was assumed also equally divided, and the appropriate separation rates applied to each half. The replacement needs were thus estimated for each occupation for the period 1957 through 1962. By adding the estimates of growth in each occupation (difference in the numbers employed from 1957-1962 as found in Table B) to the estimated replacement needs, and then adding current vacancies as estimated from the employers' reports, the total five year requirements for each of the 79 selected occupations were derived.

## II Professional Occupational Index.

Current data on labor market conditions in specific occupations makes it possible for a local public employment service to more successfully carry out its responsibilities to employers and applicants alike. With such data, the Employment Service is able to develop, strengthen and expand its services to the community. The District of Columbia Employment Service has an established Professional Office which services private industry and government. The Professional Office refers qualified applicants, in answer to employer requests for personnel, only after carefully screening their backgrounds so that they meet employer specifications. The public - employers as well as job applicants - may not know that the Professional Office here is part of a national professional clearance network which was established so that requests for specific employment not filled on a local basis can be sent to

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<sup>10</sup> U.S. Department of Labor, Bureau of Employment Security, Office of Program Review and Analysis, August 2, 1957: Labor Force Separation Rates, Selected Age Groups, Males.

<sup>11</sup> U.S. Department of Labor, Bureau of Labor Statistics, Monthly Labor Review, Vol. 79, No. 8, August 1956, Tables of Working Life for Women.







other professional centers for possible applicants in these relatively mobile occupations. This makes it possible for the District office to recruit personnel for vacancies from any part of the country — or to place a qualified applicant in another area if a job is available.

The District of Columbia Employment Service felt that if it knew where and how many "professionals" were employed, and knew specifically where the current vacancies were, the Professional Office would be in a stronger position to service employers with qualified applicants, help qualified applicants secure employment, and provide job opportunity information to students and vocational counselors, as well as carry out the job development and placement activities for which it is responsible. Beyond contributing to the Employment Service's job Security operations, this information could be utilized by the many trade, labor and professional associations in the area, the research and educational institutions located here, and by civic leaders for future planning purposes. It could be invaluable to employers planning expansion and to firms or establishments which anticipate locating in the area. Also, the number and kinds of "professionals" is important in civilian defense planning.

The information sought was obtained from the long forms (DCES-6) sent to employers in the sample survey, and from the short forms (DCES-5) designed for the remaining employers in the District of Columbia. The returns, as they were received, were edited for completeness and consistency.<sup>12</sup> All the occupations listed were then coded, using the 3-digit codes in the Dictionary of Occupational Titles. At present, behind divider cards for each occupation, there are file cards containing the name and industrial code of each firm employing or needing such workers, the number of such employees as well as the number of vacancies in the firm for that occupation as of the survey date. Even during the processing of the Index, referrals were constantly made, and many vacancies filled. The Index, which includes some occupations eliminated from this study of "Employment Prospects," has been in daily use since early 1958.

The information contained on the questionnaire was also transferred to each employer's folder, helping to keep current the record on the composition of his "professional" labor force and his particular labor market situation.

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<sup>12</sup> A telephone call or visit was made to those employers whose questionnaires were incomplete.



**APPENDIX B: SURVEY FORMS AND LETTERS**



DEPARTMENT OF LABOR  
UNITED STATES EMPLOYMENT SERVICE  
FOR THE  
DISTRICT OF COLUMBIA

Gentlemen:

As the economy expands and population increases the demand for goods and services grows which, in turn, calls for additional workers. Shortages in some occupations in professional, scientific and technical fields already exist. Many employers in the Washington area probably will require some increases in professional employees. If business and educational leaders of the community plan for their future needs, local shortages may be alleviated. The public employment service, with the cooperation of representative community and employer groups, is taking the lead in a study to measure the seriousness of this problem in the Washington Metropolitan area. Among the groups endorsing this project are:

The President's Committee on Scientists and Engineers	
Washington Board of Trade	District of Columbia State Federation of
Washington Personnel Association	Business and Professional Women's Clubs

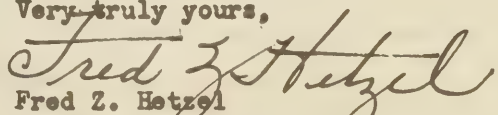
The purpose of this study is to estimate, as accurately as possible, the present and future needs for workers in the fields mentioned above. Every employer has a stake in this problem since in addition to meeting manpower requirements for expansion, personnel lost through turnover, retirement and other separations must be replaced. The information needed for such a study can come only from those establishments employing workers in these fields. The results of this survey are to be related to occupational data now being compiled for government employment by the United States Civil Service Commission.

We earnestly request your cooperation in having the attached form completed within ten days, if possible, and returned to us in the enclosed envelope.

To assist you in estimating "anticipated employment" and in supplying other data requested, we have attached a set of brief instructions.

All data received will be treated as confidential to be used for planning and statistical purposes only. As a participating employer you will receive a summary of the completed study which, also, is expected to be widely used by school authorities, vocational counselors and others.

Very truly yours,

  
Fred Z. Hetzel  
Director, USES for D. C.

Enclosures







Comments:

(1) Have you had any difficulties recently in filling vacancies in any of the occupations you have listed on the front of this form? \_\_\_\_\_ If so, specify \_\_\_\_\_

(2) What do you think caused these difficulties? \_\_\_\_\_

(3) What steps have been taken to meet this problem? \_\_\_\_\_

(4) If separations in any of these occupations have been excessive, what do you think have been the major causes of this turnover? \_\_\_\_\_

(5) Other Comments: \_\_\_\_\_

Instructions for Completing Survey Form

In the heading of the form : (a) In the spaces "By \_\_\_\_ Title \_\_\_\_," please enter the name and title of the person supplying the information. This will be helpful if we have any questions; (b) in the space "Please Return by \_\_\_\_," we have entered the date by which the completed form should be mailed to us. Observance of this date will help us to meet our schedule. "TOTAL EMPLOYMENT"; In the space, "Reported as of December 15, 1956" we have entered the employment figure reported by your establishment on unemployment compensation payroll reports for the fourth quarter of 1956. This will be useful for comparison purposes, and as a check on the inclusion of branch establishments. In the space "Last payroll period \_\_\_\_," please enter the total number of workers included on your most recent payroll, in all occupations. The payroll period should be the same as that used for entries in columns II-VI. In "Anticipated October 1959" and "...October 1962 \_\_\_\_," please enter your best estimates as to the total number of workers you expect to have on the payroll two and five years hence. In developing estimates of your future employment requirements here and for columns VIII and IX, it should be assumed that current national economic conditions will continue without significant change throughout the period covered. All estimates of employment requirements should be based on your present-day normal workweek.

Column I - Occupations : List each professional, scientific or technical occupation in which you (1) now employ workers, (2) have one or more vacancies and/or (3) expect to have workers employed two or five years hence. Thus, if you usually employ an ACCOUNTANT but the job is now vacant this occupation should be listed, with appropriate entries in columns VII, VIII and IX, even though no entry would appear in columns II through VI. Similarly, even if you do not have a PERSONNEL COUNSELOR's job in your establishment, but plan to add such a position in the next two or five years this occupation should be listed in Column I, with appropriate entries in columns VIII and IX, but none in columns II through VII. A list of occupations is on the reverse side of these instructions for your guidance.

Columns II - VI. Number of Workers for Last Payroll Period Ending \_\_\_\_ 195\_\_ : Enter the ending date of your most recent payroll period. Enter the number of workers (excluding trainees) you now have in each occupation listed in column I. The entry in column II for each occupation should be the sum of the entries in columns IV through VI. The number of female workers in each of the listed occupations should be entered in column III. Sex and age group data are needed to prepare our estimates of total replacement needs for professional workers.

Column VII - Current Job Vacancies : For each listed occupation enter the number of job vacancies you now have and for which you are currently seeking workers.

Columns VIII and IX. Anticipated Employment : For each listed occupation, enter your estimates of the total number of workers you expect to have two and five years from now. These estimates should represent the number of trained workers required to be on the payroll at the designated times in order to meet production schedules now planned or contemplated. Assume that adequate supplies of labor and materials will be available. Take into account planned or contemplated expansion or contraction of your operations. Except in the case of expected employment decreases, the entries in these columns ordinarily should equal or exceed the sum of columns II and VII (current employment plus job vacancies).

Comments (reverse side) : Your responses to these questions will furnish valuable clues to the current labor market situation in professional occupations. Please give these items careful consideration.

Mailing Completed Forms : Using the enclosed self-addressed envelop (no postage required), please mail your completed survey form on or before the date shown in the heading. An extra copy of the form is enclosed for your files. If additional copies are needed, please call the number below.

ANY QUESTIONS? IF SO, PHONE District 7-7000; extension 58
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The professional, scientific and technical activities covered by this survey include the following occupations; enter other professional, scientific or technical occupations also if used in your establishment. For positions combining two or more fields, report only that in which individual's main employment occurs.

ACCOUNTANTS AND AUDITORS  
 ACTUARIES  
 ARCHITECTS  
 WRITERS, EDITORS AND REPORTERS  
 AVIATORS  
 BACTERIOLOGISTS  
 CHEMISTS  
 COMMERCIAL ARTISTS  
 DECORATORS AND WINDOW DRESSERS  
 DENTISTS  
 DESIGNERS  
 DIETICIANS  
 DRAFTSMEN  
 ECONOMISTS  
 EMBALMERS  
 EMPLOYMENT INTERVIEWERS  
 EMPLOYMENT MANAGERS  
 ENGINEERS, AERONAUTICAL  
     CERAMIC  
     CHEMICAL  
     CIVIL  
     ELECTRICAL  
     ELECTRONICS  
     INDUSTRIAL  
     MECHANICAL  
     METALLURGICAL  
     MINING  
     RADIO  
 HOME ECONOMISTS  
 INDUSTRIAL DESIGNERS

LABORATORY TECHNICIANS  
 LAWYERS  
 LIBRARIANS  
 MATHEMATICIANS  
 METEOROLOGISTS  
 MUSICIANS AND MUSIC TEACHERS  
 NURSES, REGISTERED  
 OPTOMETRISTS  
 OCCUPATIONAL THERAPISTS  
 OSTEOPATHIC PHYSICIANS  
 PERSONNEL COUNSELORS  
 PHARMACISTS  
 PHOTOGRAPHERS  
 PHYSICIANS AND SURGEONS  
 PHYSICISTS  
 PSYCHOLOGISTS  
 RADIO ANNOUNCERS  
 RADIO OPERATORS  
 SOCIAL WORKERS  
 SPECIFICATIONS WRITERS  
 STATISTICIANS  
 SURVEYORS  
 TEACHERS, COLLEGE AND UNIVERSITY  
     HIGH SCHOOL  
     NURSERY AND ELEMENTARY  
     ALL OTHER  
 TITLE SEARCHERS  
 TRAINING DIRECTORS  
 VETERINARIANS  
 X-RAY TECHNICIANS

(See Other Side for Instructions)



EMPLOYMENT IN  
PROFESSIONAL, SCIENTIFIC, AND TECHNICAL OCCUPATIONS  
WASHINGTON METROPOLITAN AREA

81  
Budget Bureau NO. 44-5724

**(CONFIDENTIAL)**

Name of  
Establishment \_\_\_\_\_ By \_\_\_\_\_ Title \_\_\_\_\_  
Address \_\_\_\_\_ Industrial Code \_\_\_\_\_ Please  
Return by \_\_\_\_\_  
TOTAL EMPLOYMENT: Reported as of Dec. 15, 1956 \_\_\_\_\_ During Last Payroll Period \_\_\_\_\_

(Note) Include personnel in main and branch establishments, located in the District of Columbia, City of Alexandria, Fairfax and Arlington Counties in Virginia and Prince Georges and Montgomery Counties in Maryland.

[illegible]

(INSTRUCTIONS AND COMMENTS ON REVERSE)

DEPARTMENT OF LABOR  
U. S. Employment Service  
for  
District of Columbia

EMPLOYMENT IN  
PROFESSIONAL, SCIENTIFIC, AND TECHNICAL OCCUPATIONS  
WASHINGTON METROPOLITAN AREA

Instructions for Completing Survey Form

In the heading of the form: (a) In the spaces "By \_\_\_\_ Title \_\_\_\_," please enter the name and title of the person supplying the information. This will be helpful if we have any questions; (b) in the space "Please Return by \_\_\_\_", we have entered the date by which the completed form should be mailed to us. Observance of this date will help us to meet our schedule. "TOTAL EMPLOYMENT": In the space "Reported as of December 15, 1956" we have entered the employment figure reported by your establishment on unemployment compensation payroll reports for the fourth quarter of 1956. This will be useful for comparison purposes, and as a check on the inclusion of branch establishments. In the space "During last payroll period \_\_\_\_", please enter the total number of workers included on your most recent payroll, in all occupations.

Column I - Title of Occupation: List each professional, scientific or technical occupation in which (1) now employ workers, or (2) have one or more vacancies.

Column II - III. Employment (last payroll) in each occupation listed in Column I: Enter the total number of workers and also female workers you now have in each occupation listed in Column I.

Column IV - Current Job Vacancies: For each listed occupation enter the number you now have and for which you currently are seeking workers.

Mailing Completed Forms: Use the enclosed self addressed envelope (no postage required) to mail your survey form on or before the date called for in the heading. An extra copy of the form is enclosed for your files. If additional copies are needed or further information, please phone, District 7-7000, extension 58.

.....

The professional, scientific and technical activities covered by this survey include the following occupations; enter other professional, scientific or technical occupations also if used in your establishment. For positions combining two or more fields, report only that in which individual's main employment occurs.

ACCOUNTANTS AND AUDITORS

ACTUARIES

ARCHITECTS

WRITERS, EDITORS AND REPORTERS

AVIATORS

BACTERIOLOGISTS

CHEMISTS

COMMERCIAL ARTISTS

DECORATORS AND WINDOW DRESSERS

DENTISTS

DESIGNERS

DISTICIANS

DRAFTSMEN

ECONOMISTS

EMBASSERS

EMPLOYMENT INTERVIEWERS

EMPLOYMENT MANAGERS

ENGINEERS, AERONAUTICAL

CERAMIC

CHEMICAL

CIVIL

ELECTRICAL

ELECTRONICS

INDUSTRIAL

MECHANICAL

METALLURGICAL

MINING

RADIO

HOME ECONOMISTS

INDUSTRIAL DESIGNERS

LABORATORY TECHNICIANS

LAWYERS

LIBRARIANS

MATHEMATICIANS

METEOROLOGISTS

MUSICIANS AND MUSIC TEACHERS

NURSES, REGISTERED

OPTOMETRISTS

OCCUPATIONAL THERAPISTS

OSTEOPATHIC PHYSICIANS

PERSONNEL COUNSELORS

PHARMACISTS

PHOTOGRAPHERS

PHYSICIANS AND SURGEONS

PHYSICISTS

PSYCHOLOGISTS

RADIO ANNOUNCERS

RADIO OPERATORS

SOCIAL WORKERS

SPECIFICATIONS WRITERS

STATISTICIANS

SURVEYORS

TEACHERS, COLLEGE AND UNIVERSITY

HIGH SCHOOL

NURSERY AND ELEMENTARY

ALL OTHER

TITLE SEARCHERS

TRAINING DIRECTORS

VETERINARIANS

X-RAY TECHNICIANS

DEPARTMENT OF LABOR  
UNITED STATES EMPLOYMENT SERVICE  
FOR THE  
DISTRICT OF COLUMBIA

83

Gentlemen:

As the economy expands and population increases the demand for goods and services grows which, in turn, calls for additional workers. Shortages in some occupations in professional, scientific and technical fields already exist. Many employers in the Washington area probably will require some increases in professional employees. If business and educational leaders of the community plan for their future needs, local shortages may be alleviated. The public employment service, with the cooperation of representative community and employer groups, is taking the lead in a study to measure the seriousness of this problem in the Washington Metropolitan area. Among the groups endorsing this project are:

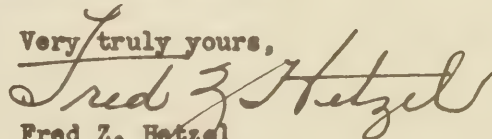
The President's Committee on Scientists and Engineers	
Washington Board of Trade	District of Columbia State Federation of
Washington Personnel Association	Business and Professional Women's Clubs

The purpose of this study is to estimate, as accurately as possible, the present and future needs for workers in the fields mentioned above. Every employer has a stake in this problem since in addition to meeting manpower requirements for expansion, personnel lost through turnover, retirement and other separations must be replaced. The information needed for such a study can come only from those establishments employing workers in these fields. The results of this survey are to be related to occupational data now being compiled for government employment by the United States Civil Service Commission.

We earnestly request your cooperation in having the attached form completed within ten days, if possible, and returned to us in the enclosed envelope.

All data received will be treated as confidential to be used for planning and statistical purposes only. As a participating employer you will receive a summary of the completed study which, also, is expected to be widely used by school authorities, vocational counselors and others.

Very truly yours,



Fred Z. Hetzel  
Director, USES for D. C.

Enclosures





DEPARTMENT OF LABOR  
UNITED STATES EMPLOYMENT SERVICE  
FOR THE  
DISTRICT OF COLUMBIA

Gentlemen:

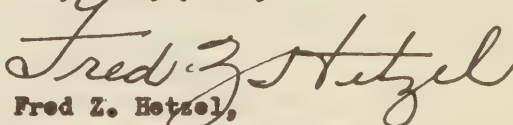
A short time ago we sent you a questionnaire concerning data on professional, scientific and technical employees in your establishment.

If you already have returned the questionnaire please ignore this follow-up letter. In case the original has been misplaced, we are attaching another form and request that you complete and forward it to us in the self-addressed envelope which requires no postage.

Your reply is most important because this study is going only to a select, but representative, "sample" of our local employers. We are sending this reminder because the accuracy of our findings depends on responses of each individual in the "sample" group.

We assure you that your name will not be used and that all data will be combined in a composite study.

Very truly yours,

  
Fred Z. Hetzel,  
Director, USES for the  
District of Columbia

Enclosures

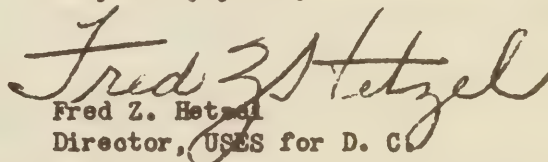




DEPARTMENT OF LABOR  
UNITED STATES EMPLOYMENT SERVICE  
FOR THE  
DISTRICT OF COLUMBIA

Thank you for the interest expressed by your firm in returning the completed survey questionnaire on professional, scientific and technical personnel in your employ. The information submitted is another step toward the completion of a successful study which should be useful in the future for the community as a whole.

Very truly yours,

  
Fred Z. Hetzel  
Director, USES for D. C.



JNO. G. RHODES, JR.  
COMMISSIONER  
UNEMPLOYMENT COMPENSATION  
COMMISSION  
VIRGINIA STATE  
EMPLOYMENT SERVICE  
AFFILIATED WITH  
UNITED STATES EMPLOYMENT SERVICE



P. O. Box 87  
Arlington, Virginia  
November 15, 1957

Gentlemen:

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We earnestly request your cooperation in having the attached form completed within ten days, if possible, and returned to us in the enclosed envelope.

To assist you in estimating "anticipated employment" and in supplying other data requested, we have attached a set of brief instructions.

All data received will be treated as confidential to be used for planning and statistical purposes only. As a participating employer you will receive a summary of the completed study which, also, is expected to be widely used by school authorities, vocational counselors and others.

Very truly yours,

Carroll M. Early, Manager





(PLEASE SEE OTHER SHEET FOR INSTRUCTIONS)

ESTABLISHMENT	BY	TITLE

(NOTE) INCLUDE PERSONNEL IN MAIN AND BRANCH ESTABLISHMENTS, LOCATED IN THE DISTRICT OF COLUMBIA, CITIES OF ALEXANDRIA AND FALLS CHURCH, FAIRFAX AND ARLINGTON COUNTIES IN VIRGINIA AND PRINCE GEORGE AND MONTGOMERY COUNTIES IN MARYLAND.

	REPORTED AS OF	LAST PAY-	ANTICIPATED	ANTICIPATED
TOTAL EMPLOYMENT:	DEC. 15, 1956	ROLL PERIOD	OCT. 1959	OCT. 1962

INDUSTRY CODE

[illegible]

(COMMENTS ON REVERSE)

(1) HAVE YOU HAD ANY DIFFICULTIES RECENTLY IN FILLING VACANCIES IN ANY OF THE OCCUPATIONS YOU HAVE LISTED ON THE FRONT OF THIS FORM? \_\_\_\_\_ IF SO, SPECIFY \_\_\_\_\_

(2) WHAT DO YOU THINK CAUSED THESE DIFFICULTIES? \_\_\_\_\_

(3) WHAT STEPS HAVE BEEN TAKEN TO MEET THIS PROBLEM? \_\_\_\_\_

(4) IF SEPARATIONS IN ANY OF THESE OCCUPATIONS HAVE BEEN EXCESSIVE, WHAT DO YOU THINK HAVE BEEN THE MAJOR CAUSES OF THIS TURNOVER? \_\_\_\_\_

(5) OTHER COMMENTS: \_\_\_\_\_





